

Railway Age

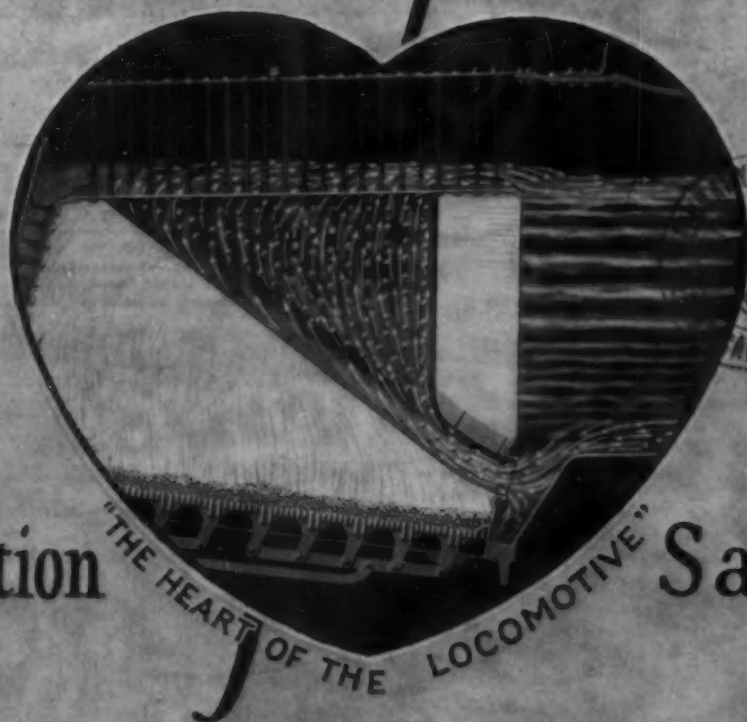
WITH WHICH IS INCORPORATED THE RAILWAY REVIEW

FIRST HALF OF 1927—No. 18

NEW YORK—APRIL 2, 1927—CHICAGO

SEVENTY-SECOND YEAR

5772 Syphons
in 2789 Locomotives on 98 Railroads



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Economy

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New York Chicago

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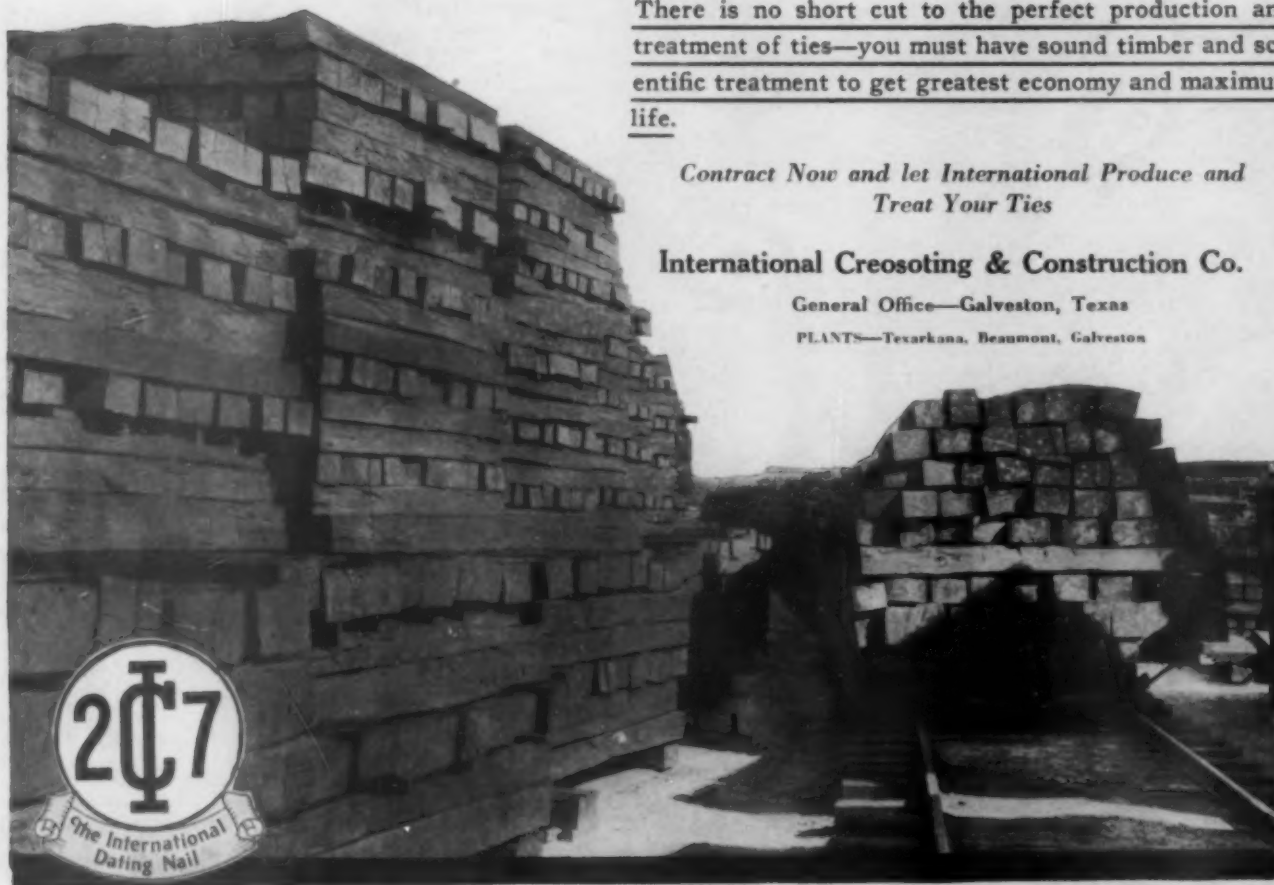
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Railway Age

Vol. 82

April 2, 1927

No. 18



Seaboard Express on P. R. R. and Elizabeth, N. J.

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Railway Age

Vol. 82, No. 18

April 2, 1927

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Page 5 of Advertising Section

Office Sanitation

SANITATION, in the sense of fresh air, good light and cleanliness, is a matter of importance in railway offices. In the main, the day when a railway office, particularly a local freight office, was a dreary, dismal hole, has passed. The trend in the opposite direction has been marked in the freight stations built recently. It took a great many years, but the railroads have at last come to the realization that men cannot give their best efforts in a dingy office that has all the objectionable characteristics of a second-hand store. Freight stations are seldom situated among aesthetic surroundings. Usually they are in the least attractive districts of the city. But this is no reason for having the offices agree with their squalid surroundings. Rather, it is a reason why particular effort should be made to have the offices light, airy and clean. Money expended for this purpose is an excellent investment.

Research Pays Big Dividends

A RECENT bulletin of the United States Chamber of Commerce states that American industry is spending approximately \$35,000,000 a year on research. It also estimates that eventually this same investment in research will save \$500,000,000 a year. The difficulty is that in the majority of cases it is practically impossible to trace the savings back to the investment. This is because a large proportion of the saving effected is accomplished through indirect channels rather than direct. It has been hard for a graduate of the old school of railroading to see any advantage in employing high-salaried men to "fool" with test tubes or testing machines. Money he may have spent for research was usually in cases where he had to have immediate results, and even then it was often spent grudgingly. Today, however, there are very few railroad officers who are opposed to the modern methods of conducting research. Witness the various research activities already undertaken of the American Railway Association.

Battleship Gray the Color of a Big Four Pacific

AS reported in last week's *Railway Age*, the Baltimore & Ohio has adopted olive green with red and gold striping as the colors for its new passenger locomotives being delivered this week. We have now received a communication from R. C. Schmid, chief draftsman for the Big Four at Beech Grove, Ind., telling of the refurbishing of a Pacific locomotive, New York Central Lines No. 6467, at Beech Grove shops, the outstanding characteristic of which is its new color, battleship gray. Mr. Schmid encloses a photograph of this

locomotive, which is reproduced on another page of this issue. Battleship gray, we believe, is not infrequently used as a preliminary coating for locomotives in the builders' shops, but the finishing of this Big Four locomotive was done in lacquer and is for actual service. It is getting so that a week has to be rather dull if it does not bring news of some striking development in individualizing locomotive appearance.

The Spread of Railroad Truck Operation

IT is important and significant that more railways are turning for the first time to the motor truck as a possible solution of the problem of handling l.c.l. freight over short distances at reduced cost. It is even more important and significant that those railways which have been using trucks for years are augmenting their original motor truck operations by the addition of new lines. The New York Central, which contracts for more motor truck service than any other railroad in the United States, is constantly putting trucks at work on new routes. The Pennsylvania, likewise a leader in the truck transportation field, recently made arrangements for the operation of trucks on its fortieth route. The same tendency is noted in the case of other railways. This indicates that the motor truck has been tried in railway service and found useful and advantageous. Recent years have constituted a test period through which the truck has come with an excellent record of performance. The truck, and its cousin, the tractor and trailer, have been pressed into service to relieve terminal congestion and to speed up and lower the cost of handling l.c.l. freight through terminals. It has also taken the place of many package freight peddler trains on main and branch lines.

Tax Increases Exceed All Others

EVERYBODY'S taxes are increasing, especially those of railways, which exceeded all previous figures in 1926. Few people realize how much more rapidly the taxes of the railways have been increasing than any other form of their income or outgo. The significance of the increases in railway taxes that have been occurring may perhaps be made most clear by presentation of the following facts: In 1906 the railways' total earnings were \$34 for each \$1 of taxes they paid; in 1916 only \$23, and in 1926 only \$16. In other words, during this period taxes increased more than twice as much in proportion as total earnings. In 1906 for each \$1 of taxes they paid, the railways incurred \$22 of operating expenses; in 1916 only \$14, and in 1926 only \$12. There has been a great increase in wages, but it has not been in proportion to the increase in taxes. In 1906 the railways paid their employees \$13 for every \$1 they paid the tax gatherer;

in 1916 only \$9, and in 1926 only \$7.50. In 1906 for each \$1 of taxes they paid the railways earned \$10.40 net operating income; in 1916, \$6 and in 1926 only \$3.40. Whatever may be done with the money taken from the railways in taxes, one thing is certain—it cannot, also, be taken from them in reductions of rates, or used to improve their service or to pay higher wages. It is a curious and significant fact that spokesmen of labor unions and radical public men who delight in emphasizing and even exaggerating the dividends paid the owners of the railways never have anything to say about the fact that for some years their taxes have exceeded their dividends and still are increasing faster.

High Steam Pressures Discussed

BY an odd coincidence the merits of high pressure steam for locomotives were discussed by the Western Railway Club and the Western Society of Engineers at Chicago on the same evening. Lawford H. Fry, metallurgical engineer of the Standard Steel Works Company, Philadelphia, Pa., described test results secured with the new Baldwin locomotive 60,000, having a working boiler pressure of 350 lb. per sq. in., in a paper before the Western Railway Club, which was abstracted on page 975 of the *Railway Age* of March 26. C. B. Page, manager of the Steamotor Company, Chicago, on the same evening, presented a comprehensive survey of recent European motive power developments, with particular emphasis on the use of high steam pressures, before the Western Society of Engineers. An abstract of Mr. Page's paper appears elsewhere in this number. Under present conditions the advantages of high pressure steam for locomotives seem in a fair way to overbalance its disadvantages, both in this country and abroad, if the latest activities of practically all of the locomotive builders are any criterion. American experimental locomotives are now operating with boiler pressures up to 400 lb. per sq. in. In Europe, however, where the urge for fuel economy is greater even than in this country, the term "high pressure" has come to mean 850 lb. per sq. in. or more, and at least one locomotive is working on the German State Railways at this pressure with a reported fuel saving of 25 per cent over superheated locomotives at ordinary pressures. Able engineers are working on the designs of new locomotive types in Europe and it would seem the part of good judgment to test thoroughly not only the new American designs but those European developments which give promise of being adaptable to American conditions with profit.

Simple Applied Psychology

A MAINTENANCE of way officer remarked recently that practically all of the methods and practices of the men working under his jurisdiction are saturated with ideas and suggestions originating with the men themselves, or at least apparently originating from this source. This statement reflects a policy of applied psychology to an unusual degree. Here is a railroad officer who understands human nature and who is broad-minded and wise enough to draw out and glean from the experiences of his subordinates the helpful and practical ideas which in operation will work to the benefit of the railroad, stimulate the efforts of the workers from which the suggestions come, and in the end reflect credit upon both the superior officer and his organization. In his policy of encouraging and accepting suggestions from

even the most minor subordinates, the particular officer referred to is not a pioneer. The past few years have witnessed the widespread establishment of periodic meetings of supervisors and workers and many varied methods of getting these men together on special occasions with the specific view of obtaining closer co-operation and of drawing out helpful suggestions. Attention is directed particularly to that part of the statement, "originating with the men themselves or at least apparently originating from this source." Knowledge of the officer in question makes clear the latter part of this statement, "or at least apparently originating from this source," for he has the unusual faculty of sowing the seeds of his own ideas and creations so carefully in the minds of his men that from all appearances the ideas originate and develop from the bottom up, rather than from the top down. To appreciate the wisdom of the psychology in this latter policy it should be remembered that every man, regardless of his degree of training or intellect, takes pride in and draws stimulus from his own ideas and creations. The policy of making men think they are creative and working under their own impulses may well be used more extensively by railway officers.

An Adventurous Legislator

THERE is a spirit of romance in railroading in the minds of most people, and this is particularly true in relation to the steam locomotive. In any high school, for instance, there will be found a few boys who show the same intense interest in railroad operations and locomotives as do some of their fellows in stamp collections or athletics. They can discuss intelligently the fine points about the locomotives and cars which pass through their communities, even though they may have no direct railroad contacts. The same thing may be observed in many cases among grown men. We have in mind, for instance, a machine tool manufacturer who has never worked for a railroad, but who is as well posted on locomotive design as most railroad mechanical department officers. He knows the fine points of the locomotives that pass his plant and to hear him talk about them one would think that they possessed real individualities. This interest in railroading on the part of many boys and men in other walks of life should form a strong point of contact between the railroads and the public and help to lead to better understandings in the matter of improved relations between the public and the carriers. A rather unusual instance of such an interest is indicated by the story, elsewhere in this number, told by a member of the Illinois State Senate, of a ride in bad weather on a fast passenger locomotive on the Chicago & Alton. It is hard to visualize a legislator of this type who would not deal with questions of railroad regulation in a sympathetic and understanding frame of mind.

Poultry Trains as Business Getters

A STRIKING example of the value of agricultural development efforts in bringing business to the railroads from unexpected quarters is found in the experience of the Chicago, Burlington & Quincy in the operation of a poultry special in Nebraska and Kansas during the spring of 1926. The primary purpose of the train was conceived to be the demonstration of the best methods of handling and caring for poultry with a view to the stimulation of poultry production and poultry shipments. But more unexpected than the increased

poultry production in the territory covered by the train, which is estimated at between 40 and 50 per cent, was the influx of orders to local lumber dealers for lumber and building materials for the construction of poultry houses. An operator of 11 lumber yards in Nebraska found that following the visit of the special train, new business had been produced at each point, while another lumberman reported that he and his competitor had each sold more lumber for poultry houses since the appearance of the train than in the preceding five years. A cold storage company and a packing company each established several poultry-receiving branches. After making a survey of the poultry production a box manufacturing concern purchased more than \$50,000 worth of material for the construction of chicken crates. It was reported from a point in Northern Kansas that because of extremely small crops farmers had been forced to rely largely on poultry profits as their only source of income during 1926. Reports of similar activity reached the railroad from practically every one of the 95 towns visited by the train.

More Efficient and Economical Highway Crossing Protection

SEVERAL railroads are using standard wig-wag and flashing-light signals to provide more efficient protection for street and highway traffic at railroad crossings and at the same time are greatly reducing the operating costs for such protection. For example, in Houston, Tex., the Southern Pacific has replaced crossing watchmen with automatic signals at 18 crossings. A crossing watchman's salary was \$1,260 a year and an automatic wig-wag costs about \$240 a year so that this change represents an aggregate saving of \$12,480 a year and at the same time provides more reliable, satisfactory service for 24 hours every day. At Sherman, Tex., crossing watchmen at five adjacent crossings were replaced by electric wig-wags controlled from a central tower by one set of watchmen. At Elgin, Ill., the Chicago & North Western installed 41 wig-wags at 25 street crossings and the Atlantic Coast Line is installing crossing signals at 21 crossings in Tampa, Fla. The Pennsylvania installed 31 flashing-light crossing signals at 13 crossings in Kokomo, Ind., replacing 10 watchmen employed 12 hours each day.—The same proportionate benefits can also be derived from isolated crossings at points along the line. The fact that more of the states are adopting the A.R.A. Signal Section standard aspect for either the wig-wag or the flashing light crossing signal increases the effectiveness of these indications for controlling highway traffic at railroad crossings and, therefore, aids the railroads in installing such equipment as replacement or in lieu of more expensive types of apparatus, such as gates or watchmen.

Defective Window Glass in Passenger Cars

AFTER an extended trip in a passenger coach, travelers frequently complain of headaches and eye weariness. Charles F. Prentice, president of the New York State Board of Examiners in Optometry, explains one source of this discomfort. "Even homogeneous window glass of a kind which fails to reflect or refract absolutely truthful images" he says, "is possessed of irregularities or undulations of surface sufficient to produce eye-strain, through image-distortion within the eye

that unconsciously struggles to overcome it by unnatural efforts of focal adjustment accommodation. Therefore, a window pane which is directed to the open and liable to be looked through should not contain striations, bubbles, wire or any other obstructions to the normal use of accommodation and its intimately associated ever-shifting lines of binocular fixation." Many passenger coaches are equipped with plain window glass containing flaws such as those mentioned. It is true that the homes of many of those who travel in passenger coaches have the same kind of glass. The point of difference, however, is in the utilization. At home, one does not ordinarily look out of a window for long periods of time. The traveller experiences the full effect of the defects in the glass which are intensified by the rapid movement of the images. This is particularly true of those who are inclined to experience uneasiness owing to the motion of the train. If such passengers are forced to look through window glass which causes considerable image distortion, they are liable to experience a degree of discomfort which, they may attribute to a poor roadbed, poor ventilation, etc. None of these impressions react favorably to the railroad.

How the Railways Cover the Country

THERE are 3,068 counties in the United States, ranging in size from San Bernardino county, California, with an area of 20,157 square miles, to tiny counties in the East with as little area, in some cases, as 30 square miles. Of this number, only 109, or about 3½ per cent, are entirely without railway service within their borders. There are 52 more counties, or 1 3/5 per cent, which Class I railroads do not enter. Thus it will be seen that Class I railroads of the United States serve nearly 95 per cent of its counties.

In terms of population, which is, perhaps, the more accurate measurement, there were 105,710,620 people in the United States, according to the 1920 census, and 730,248 of these, or somewhat less than 0.7 per cent, lived in counties without railroad service. An additional 590,191, or slightly more than 0.5 per cent, lived in counties without Class I railroad service. In other words, Class I railroads served directly all but about 1.2 per cent of the entire population of the country.

Most of the 109 counties without railroad service are scattered, but there are certain groups which form white spots on the railway maps for various reasons, usually a combination of inaccessibility and lack of natural resources. The largest of these groups in the matter of population is in the Kentucky and Tennessee mountains, where a cluster of 11 adjoining counties in the two states, with a population of 150,290 and an area of 3,749 square miles, are without railway service. The second largest group is in the deltas of the York, Rappahannock and Potomac rivers in Virginia, where there is a group of 10 adjoining counties without railway service; these counties have a population of 90,912 and an area of 1,962. There are four adjoining counties in the hills of northern Georgia without railway service, having a population of 27,654 and an area of 1,067 miles.

In total area without railroad service, the five southern counties of Utah, with 22,150 square miles, form the largest group. The population of this area is, however, only 19,062, or less than 1 per square mile. A group of 8 counties in south central Texas is second in area without railroad service, with 12,283 square miles and 21,189 population, while South Dakota has a group of 6 coun-

ties, principally Indian reservations, without railroad service and having an area of 7,165 square miles with a population of 13,248.

Texas and Kentucky are tied for the lead in counties without railroad service, with 17 each, but not as to population. One of the counties without railroads in Texas has only 37 inhabitants, while two others have 67 and 82, respectively. The total population of these counties in Texas is 44,221 as against 188,820 in Kentucky. Virginia is third with 12, while Tennessee has 9 and Utah and South Dakota have 7 each. Georgia and Nebraska have 5 each, Montana has 4 and North Carolina has 3. Massachusetts has 2 (both islands), as have Mississippi, Indiana, Colorado, California, Wyoming, Oregon and Washington, while Pennsylvania, West Virginia, Illinois, Missouri, Arkansas, Louisiana and New Mexico have one each.

With the centenary of railroads in this country at hand, this record of pioneering, progress and initiative is without equal in the annals of industrial history.

Advertising Passenger Service

IN an article in the March 17 issue of *Printers' Ink* attention is directed to the extensive advertising campaigns now being conducted by various railroads in order to build up their passenger traffic. "The railroads are advertising!", the article reads. "The fact might well be written in capital letters, for the advertising is large in space, large in character and, undoubtedly, large in public appeal if recent indications are to be believed."

It is gratifying to have the authoritative word of this journal that the railroads are doing so well in this field. That they have a real story to tell concerning their passenger service cannot be gainsaid, and some of the high points of this story are summarized in an article, the first part of which appears on page 1055 of this issue of the *Railway Age*. The *Printers' Ink* article goes on to relate that a change has come about in the character of railroad advertising—the roads having apparently abandoned institutional appeal and praise of travel in general and are now concentrating all their effort on drawing attention to their own individual trains and service.

A passenger traffic officer is quoted as saying, "There was a time when we had only to dwell on the wonders of Niagara Falls, the joys of Atlantic City, the beauties of Washington or the talking points of any other objective, to see an immediate response in our passenger travel in that direction. But no longer. Tell the public of the attractions of a place and the motor fan packs his family into the Ford or something better and away they go to inspect it. Now we confine our appeal to telling them to get there—by railroad—and dwelling upon the advantages of using the sleeper, the parlor car or the day coach."

Passenger revenues in 1926 again declined slightly from those of the previous year. However, through travel in limited trains, as measured by the growth in receipts from the Pullman surcharge, increased 5 per cent.

Whatever may be the solution to the short haul problem, there can be no question that through de luxe travel is a fertile field for development. Our article shows that the railroads are fully awake to this fact, as is proved by the great improvements they have made in such service. *Printers' Ink* bears witness to the equally gratifying fact that they are not making the mistake of hiding their light under a bushel.

Five Billion-Dollar Railroad Corporations

THERE are in this country ten billion-dollar corporations. One of these is the Steel Corporation. Another is the Standard Oil Company of New Jersey. A third is the American Telegraph & Telephone Company. Two are automobile manufacturers. Five are railroad corporations. All but one are related to transportation or communication. The one exception, which is the Steel Corporation, however, sells a large proportion of its products for uses of transportation—a larger proportion, probably, than for any other purpose. A writer commenting on these facts in the *New York Times* of Sunday, March 27, aptly remarks: "The foundation on which the billion-dollar corporations are reared is the demand for speed—transportation, communication, and their auxiliaries of steel and oil."

The Billion-Dollar Roads

The five railroads in the group of billion-dollar corporations include the Southern Pacific, the Pennsylvania, the New York Central, the Union Pacific and the Atchison, Topeka & Santa Fe.

The subject of billion-dollar corporations was first discussed by the *Wall Street Journal*, and was also the subject of an interesting article in the *New York Times* of March 27. The *Times* writer included ten companies which could be said to have attained that size for any of several reasons, such as total assets, the market value of securities, the value of physical properties or the gross sales or revenues. He gave more weight to the first two and as between these two most weight to the first—total assets. As far as the railroads are concerned the data are compiled purely on a corporation basis. Thus, in the case of the New York Central, the total assets are those of the parent company. These include the value of the stock of the subsidiary companies owned by the New York Central Railroad but not the physical investment of the subsidiaries.

The table includes a few of the columns of the table of figures that appeared in the *Wall Street Journal* and the *Times*. They are particularly significant to persons interested in railroads. The most interesting feature is the comparative relationship of size and prosperity. Thus, from the standpoint of total assets, the railroads rank second, third, fifth, seventh and eighth, and not much different from the viewpoint of the market value of their securities. When it comes to net profits, however, the five railroads have the second division of the standing all to themselves because they rank sixth to tenth. The column of funded debt outstanding is equally interesting. Three of the companies—none of them railroads—have no funded debt. The Atchison, Topeka & Santa Fe is the only railroad that has less funded debt than the other two non-railroad corporations, the said other two companies being the Steel Corporation and the American Telegraph & Telephone Company.

Five Out of Ten Are Railroads

Another interesting comparison is in the proportion of the railroad figures to the totals for the ten companies. Thus the railroads have half the total number of corporations. They own 52 per cent of the total assets. The market value of their securities is 43 per cent of the total for all ten companies. On the other hand, they earn only 27 per cent of the net profit and pay only 34 per cent of the dividends. Presumably this explains why they have 78 per cent of the funded debt.

It is now rather generally appreciated that railway securities have regained a great measure of their old popularity. This is shown by the fact that the average price of railway stocks is the highest it has been since 1909 or 1910. It is interesting also to read some of the comments about this. Thus an article in the April issue of Commerce Monthly published by the National Bank of Commerce says:

"Marked improvement in the status of railroad securities generally reflects their increased earning power and indicates that adverse factors which had impaired public confidence have been largely eliminated."

Professor W. Z. Ripley in his new book "Main Street and Wall Street" speaks of railroads under the significant title "Safe Financial Common Carriers" and includes among the many pertinent things he says about railroads, the following:

"All told, then, is there not an encouraging outlook for the railroads ahead? It was never so bright as it is now in 1927. Remember the conditions but a few years ago, when the roads were turned back to their owners by the government! It is almost like seeking to recall those trying days of the war when the British stood with their backs to the English Channel. It has been no mean achievement to bring these properties up to their present high state of efficiency."

But Professor Ripley says more. It would almost appear as if he had spoken with the table here reproduced in mind. Apparently he desires more billion dollar railroads and more prosperous ones, when he says:

Two Requirements Lacking

"Only two requirements remain to be fulfilled, namely, a slightly more generous rate level, here and there, and a vigorous and consistent attitude towards consolidation. These things accomplished, and our railroad matters would seem to have been firmly established on a secure and lasting foundation."

It is interesting that of the ten billion-dollar corporations, half should be railroads. It is not so interesting that the five railroad corporations—which include several of the more prosperous railroad companies—should be the less prosperous group of the total of ten billion-dollar corporations. Seldom can one find a more accurate picture of the restraining effect upon railroad profits exerted by regulatory authority. The truth is that the railroad security holder is protected by his large equities in railroad property values and the difference between property value and capitalization. Thus a relatively small return on property value yields a larger rate of earnings on the smaller amount of securities outstanding. Safe, Yes—from the standpoint of present security holders whose predecessors supplied the uncanceled equities. But with the degree of safety from the standpoint of the margin of profit allowed to other industry, No. And

yet the railroads have to compete with other industry for funds. Professor Ripley puts it mildly when he says that one of the requirements is "a slightly more generous rate level, here and there."

"Ironing Out" the Line

DURING the last ten years the railways have increased the investment in their properties by approximately six billion dollars. Much of this tremendous sum has gone for new equipment. Large amounts have been spent for new lines, important terminals and other outstanding projects of public interest. Large amounts have also been expended, however, for improvements in line and other facilities of lesser magnitude of which little mention has been made, but which contribute just as directly to the efficiency of operation as the more outstanding work. These improvements are of a widely diversified character—a line change to eliminate objectionable curvature at one point, the reduction of a grade at another place, the correction of a track layout that retarded operation at a third point—each relieving a local situation and thereby contributing to the improving of operation over an entire district or division.

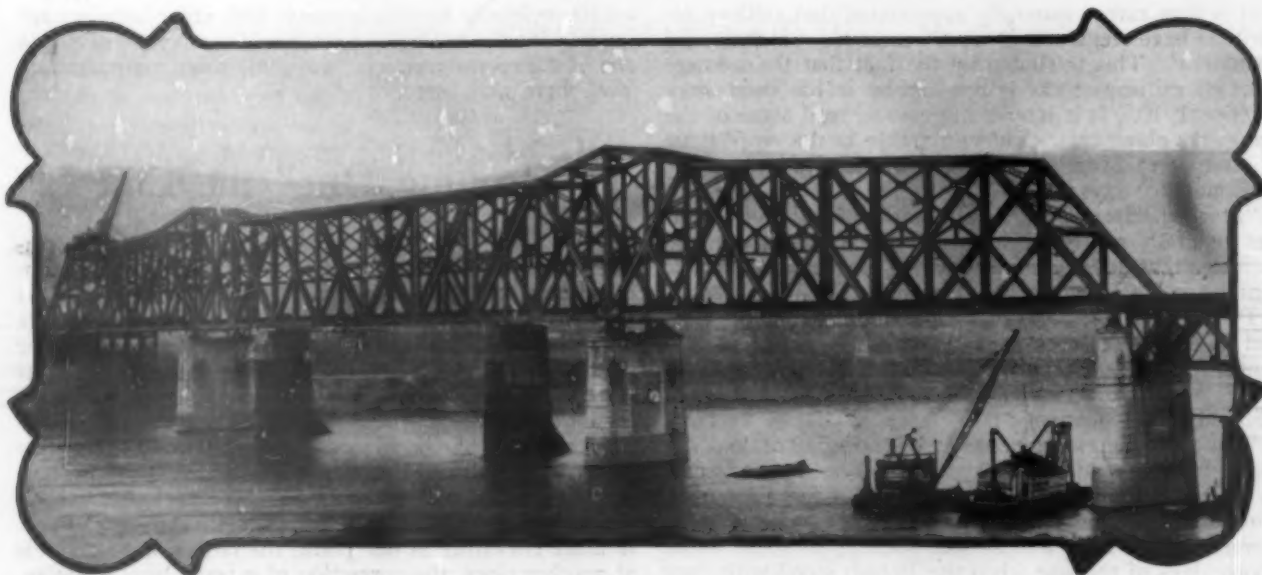
A striking illustration of work of this character is the Langtry-Osman cutoff in west Texas which was completed by the Southern Pacific in February of this year. When this road was built west from Houston to connect with the Pacific system at El Paso in 1883, it was located in the Osman canyon for a distance of 14 miles, crossing that stream 10 times on timber trestles with an aggregate length of 4,535 ft. Since the line was placed in operation scarcely a year has passed when it was not endangered by washouts and on several occasions one or more of the bridges were carried away. Twice during this period all of the structures in this canyon were destroyed and on one of these occasions, in 1919, this transcontinental line was out of service for 12 days and \$200,000 was spent in its reconstruction. Now, with the construction of the new line above flood level and with waterway openings of concrete and steel, these dangers are past. Furthermore, the line has been shortened 4½ miles and the grades and curvature improved.

Marked progress is being made in the elimination of adverse conditions at many points on many railroads. This work has been carried on with more than usual vigor during the last three or four years. Much still remains to be done, however, for improvements at one point result in another becoming the "worst spot" on the division. It is by the constant elimination of these "worst spots" that the standards of the railways as a whole are being raised from year to year and their service placed on a higher plane of economy and regularity.

The Ten Billion-Dollar Corporations

| Company | Total assets | Market value of securities (*) | Value of physical properties | Net profit | Dividends paid | Funded debt |
|---------------------------------------|------------------|--------------------------------|------------------------------|----------------|----------------|-----------------|
| 1. U. S. Steel Corporation..... | \$2,446,000,000 | \$1,779,000,000 | \$1,692,000,000 | \$117,000,000 | \$61,000,000 | \$351,000,000 |
| 2. Southern Pacific Railroad..... | 2,147,000,000 | 1,565,000,000 | 1,341,000,000 | 36,000,000 | 23,000,000 | 765,000,000 |
| 3. Pennsylvania Railroad..... | 1,819,000,000 | 1,184,000,000 | 1,010,000,000 | 62,000,000 | 30,000,000 | 403,000,000 |
| 4. Amer. Tel. & Tel. Co..... | 1,646,000,000 | 2,066,000,000 | (*)197,000,000 | 107,000,000 | 81,000,000 | 388,000,000 |
| 5. New York Central Railroad..... | 1,449,000,000 | 1,251,000,000 | 1,020,000,000 | 49,000,000 | 27,000,000 | 701,000,000 |
| 6. Standard Oil Co. of N. J..... | 1,369,000,000 | 1,072,000,000 | 520,000,000 | 111,000,000 | 54,000,000 | None |
| 7. Union Pacific Railroad..... | 1,140,000,000 | 869,000,000 | 819,000,000 | 38,000,000 | 26,000,000 | 415,000,000 |
| 8. Atch., Topeka & Santa Fe R. R..... | 1,071,000,000 | 792,000,000 | 945,000,000 | 46,000,000 | 22,000,000 | 276,000,000 |
| 9. General Motors Corporation..... | 915,000,000 | 1,521,000,000 | 400,000,000 | (*)180,000,000 | 70,000,000 | None |
| 10. Ford Motor Company..... | (*)800,000,000 | 1,000,000,000 | 300,000,000 | (*)100,000,000 | ..... | None |
| Total of 10 corporations..... | \$14,802,000,000 | \$13,099,000,000 | \$8,244,000,000 | \$846,000,000 | \$374,000,000 | \$3,299,000,000 |
| Totals of 5 railroads..... | \$7,626,000,000 | \$5,661,000,000 | \$5,135,000,000 | \$231,000,000 | \$128,000,000 | \$2,560,000,000 |
| Per cent railroads..... | 52 | 43 | 62 | 27 | 34 | 78 |

(*) Estimated. (**) Includes market value of stocks and par value of bonds. (*) Includes only parent company. Plant value of Bell System exceeds 2½ billions.



The Steubenville Bridge After Completion of New Superstructure but Before Removal of Old Piers

Erection of Steubenville Bridge Introduces Novel Problems

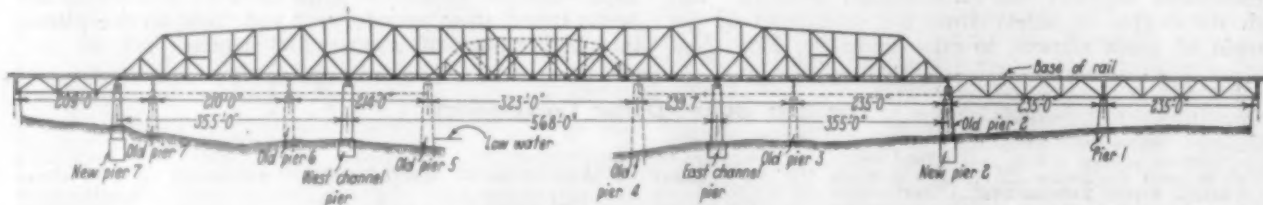
Pennsylvania replaces old Ohio river structure by new one with trusses continuous over three spans

THE sixth railroad bridge to be built across the Ohio river in the last 10 years and the third to be constructed by one road, the Pennsylvania, is now nearing completion at Steubenville, Ohio. Two of these six bridges represented the development of new railroad crossings of the river but the Steubenville bridge, like three of the others, comprises the replacement of an old structure. This newest bridge is somewhat comparable with the Southern's new bridge at Cincinnati, both having trusses continuous over three principal spans. Beyond this, however, there is little of definite similarity between the Cincinnati and Steubenville structures. Furthermore, the manner of erection of the new Pennsylvania bridge, because of peculiar conditions

what is now the Panhandle line of the Pennsylvania from Pittsburgh to Columbus, Cincinnati and St. Louis. The superstructure of the first bridge was replaced about 1888 on the original piers and as then rebuilt, it consisted of a through channel span 323 ft. long, flanked on the east by one deck span 239.7 ft. long and three deck spans 235 ft. long, and on the west by three deck spans 214 ft., 210 ft., and 209 ft. long respectively. All spans were pin-connected trusses and carried two tracks.

Strengthened Bridge 18 Years Ago

In 1908 and 1909 the 209-ft. span at the west end the two 235-ft. spans at the east end of the bridge were replaced by riveted spans designed for present day load-



The Relation of the New Steubenville Bridge to the Old

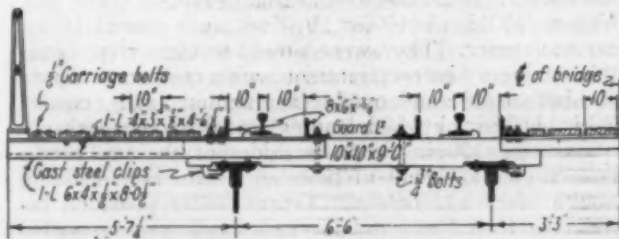
imposed, embraces features that are essentially distinctive.

Like other river crossings on important trunk lines, the story of the Steubenville bridge is one of successive replacements made necessary by the progressive increase in traffic and in the weight of locomotives and cars. The original bridge at this location was completed about 1868, shortly after the building of the eastern portion of

ing, and the rest of the old deck spans were strengthened by the introduction of center trusses taken from the old spans which had been removed. In 1916 the 323-ft. channel span was reinforced by introducing loop bars bearing against the curved ends of the bottom chord eye-bars. However, the increase in load-carrying capacity of the bridge effected as a result of these measures, was not sufficient to permit operation over the bridge of the

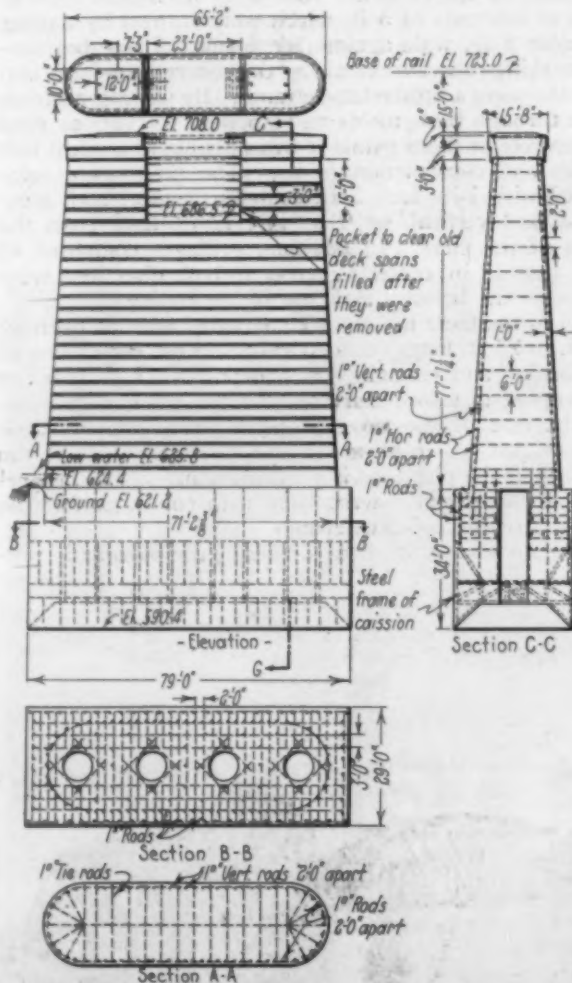
heavy power which was urgently needed on the line as a means of increasing the train loading over the one per cent grades which prevail between Steubenville and Pittsburgh.

This consideration, together with the urgent demand on the part of river shipping interests for a wider chan-



A Section Through One-Half of the Bridge Deck

nel, led to the decision to build a new bridge to replace all of the old superstructure between old Pier 2 and a point about 55 ft. west of old Pier 7. In other words, all of Spans 3 to 7, inclusive, were removed, and Span 8 was shortened two panels to make room for the new

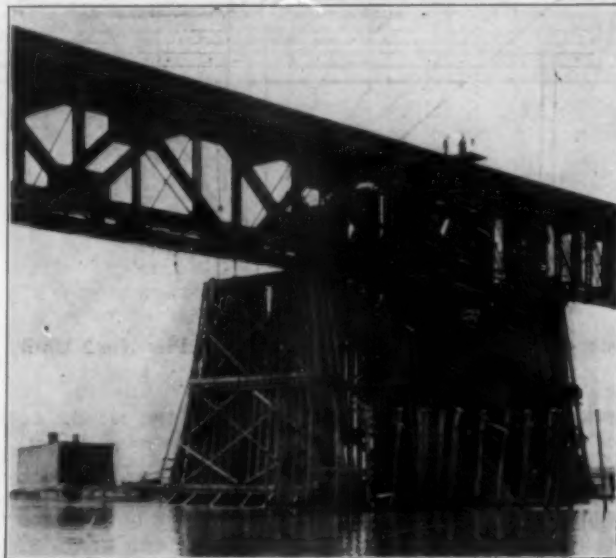


Details of One of the Channel Piers

structure but Spans 1 and 2 were retained as a part of the bridge as rebuilt.

The total length of the new superstructure is 1,278 ft., center to center of end bearings, and is divided into three spans, a center channel span of 568 ft., and two flanking

spans of 355 ft. Under this span arrangement, the locations of three of the four points of support for the new superstructure are well away from any of the old piers but the location of the east support necessarily coincided with that of old Pier No. 2. The old piers were founded on timber grillages resting on sand and were not long enough to carry the new superstructure which is considerably wider than the old. New piers were therefore definitely required at all four locations and while the locations of the new piers were determined upon considerations other than those of avoiding the locations of the old ones, it was of considerable advantage from



The Falsework for Supporting the Old Deck Spans While Removing Old Pier 2 and Building the New One to Replace It

the construction standpoint that this was the case for three of them. In fact, the replacement of Pier No. 2 with a new pier at the same site comprised one of the critical features of the project.

The Trusses Are Continuous Over Three Spans

The new superstructure consists of two continuous riveted trusses spaced 37½ ft. center to center, and having a height ranging from 67 ft. at the portals to 95 ft. over the intermediate piers. It is designed for a live load consisting of two decapod locomotives with 32,000 lb. on a pony truck axle and 72,000 lb. on each of five driver axles followed by a uniform load of 6,000 lb. per foot of track. Impact was computed according to the

formula
$$\frac{300}{300 + L} \left(\frac{LL}{LL + DL} \right)$$
 except for members

subject to reversal of stress where the formula
$$\frac{300}{300 + L}$$

$$\left(1 + \frac{m}{2M} \right)$$
 was used. Unit stresses correspond to a

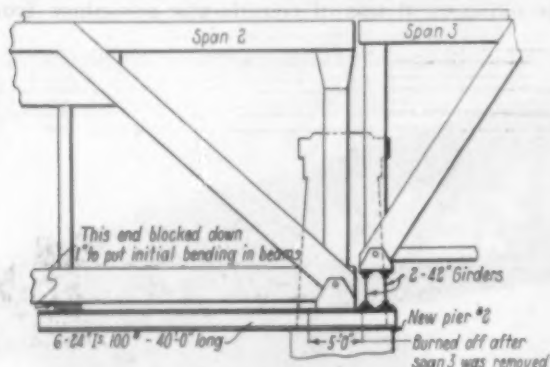
stress in tension of 16,000 lb. per sq. in., the material in the superstructure being open-hearth carbon steel throughout.

The main members are of open box section. The heaviest section is that of the diagonal L-10 M-11 which has a cover plate 44 in. by ¾ in., eight angles 8 in. by 6 in. by ⅞ in., four plates 38 in. by 1 in., two plates 22 in. by ⅞ in., and two plates 22 in. by ⅝ in. The gross

section is 342.8 sq. in. The bottom laterals are heavy and are of an I-section comprising a plate $13\frac{1}{2}$ in. by $\frac{1}{2}$ in. and four angles 7 in. by $3\frac{1}{2}$ in. by $\frac{1}{2}$ in. The lacing of the larger members is out of the ordinary and consists of a double lacing in which the pieces against the member are 5-in. by $\frac{1}{2}$ -in. bars while the outer pieces are 5-in. by $3\frac{1}{2}$ -in. by $7/16$ -in. angles.

Make Provision for Lifting the Spans

Provision for lifting the spans on jacks at each pier has been made by providing heavy jacking girders or



Method of Supporting Old Span 3 on New Pier No. 2 Until It Was Removed

special floor beams designed to transmit the weight of the bridge to jacks. These jacks are to be placed 9 ft. inside the plane of each truss for the jacking girders over the channel piers and 4 ft. for the end jacking girders. Over the channel piers these special floor beams are in duplicate. I-beam grillages have been provided in the pier tops under the jacking positions to afford adequate distribution of the jack concentrations.

Being a continuous structure, it has fixed bearings at only one point of support, the east channel pier. Owing to the allowance for longitudinal thrust made in proportioning the bearing area of these bearings, they are larger than the expansion bearings on the west channel pier. The base area is 129 sq. ft. and the lower shoe, which is the largest unit, weighs 51,425 lb. The six expansion bearings are of interest in that the segmental rollers are enclosed in oil-tight casings so that they may be completely covered with oil. The new superstructure weighs

7,683 tons and required the driving of 148,000 field rivets which are $1\frac{1}{4}$ in. in diameter in all main truss members and floor beam connections, 1 in. in diameter in hangers and sub-member connections and $\frac{7}{8}$ in. in diameter for laterals and cross braces.

The floor deck for the two tracks on the bridge embodies several departures from usual practice. The ties, which are 10 in. by 10 in. by 9 ft., are spaced 16 in. center to center. They were slotted to clear rivet heads in the stringers before treatment with creosote. Guard rails, both inside and outside the running rails, consist of 8-in. by 6-in. by $\frac{3}{4}$ -in. angles set with the backs of the 6-in. legs 10 in. from the sides of the rail heads. These angles are held in place by $\frac{3}{4}$ -in. bolts passing through every alternate tie. Plank walks provided between the tracks and outside each track are supported on steel angles spaced 4 ft. center to center, which are bolted to the guard angles mentioned above.

Details of the Substructure

The four new piers are of concrete throughout and are supported on blue shale at elevations ranging from 127 to 134 ft. below base of rail level or from 32 to 36 ft. below standard low water. As shown on the drawing, the faces of the piers are broken by horizontal rustications at intervals of 3 ft. which were formed by nailing V-molds 3 in. wide against the forms. These horizontal markings serve to break up the concrete surfaces and give the piers a finished appearance. By passing all form bolts through these molds and stopping the various runs of concrete at these points it was possible to conceal bolt marks and construction joints. The piers were reinforced with 1-in. bars 2 ft. center to center, both horizontal and vertical, set 9 in. and 12 in. back from the faces of the piers. In addition, grillages composed of 1-in. bars 12 in. center to center in both directions were placed in the bottoms and tops of the copings.

All of the piers had to be constructed with an opening 21 ft. to 23 ft. long, symmetrical about the center line of the bridge and extending to a depth of $21\frac{1}{2}$ ft. below the coping to afford clearance for the old deck trusses. In the case of the two-end piers which support deck trusses that will continue in use, the outer half of the notches in the pier tops is permanent but in the channel piers these openings were filled with concrete after the removal of the old deck span.

The foundation work was done by the pneumatic pro-



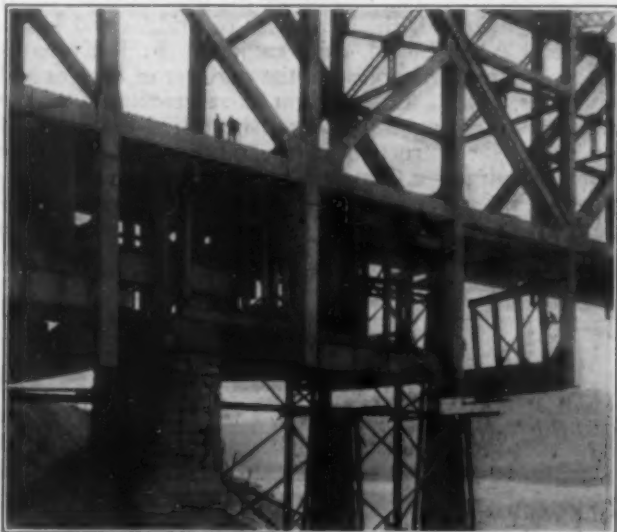
An Erection Progress View—Note the Relative Proportions of the New and Old Channel Spans

cess. The caissons had a height of 34 ft., a width of 29 ft. and a length of 79 ft. for the channel piers and a width of 23 ft. and a length of 69 ft. for the two end piers. Of the maximum depth of submergence to rock, $44\frac{1}{2}$ ft., only 15 ft. represented depth of water over the bed of the stream. The maximum pressure developed in sinking the caissons was 22 lb. The rock surface presented an eroded appearance when exposed and varied but little from the horizontal, the maximum difference in elevation under the cutting edges in any one pier being 22 in. Caissons for the two channel piers and Pier No. 2 were of steel construction, while the caisson for Pier No. 7 was of reinforced concrete construction with a steel cutting edge.

Construction of Pier 2 Was Difficult

As stated previously, the construction of new Pier No. 2 presented the greatest difficulty because it replaced an old pier on the same site which had to be removed before work on the new pier could be started. This involved the supporting of the adjacent deck spans on falsework during the entire substructure work. Owing to the fact that the piles supporting this falsework had to carry load while the caisson was being sunk, it was imperative that they should not be affected by any disturbance resulting from this work. This imposed the necessity for carrying these piles to rock, and as this required the driving of 256 piles with a cut-off length of $42\frac{1}{2}$ ft. through sand and boulders for a depth of 37 ft., it proved to be a difficult and expensive feature of the project.

Owing to the fact that the center line of the new pier is 1.4 ft. east of the center line of the old pier, the old span No. 3 on the west side of this pier was left without adequate width of bearing on the new pier. To sup-

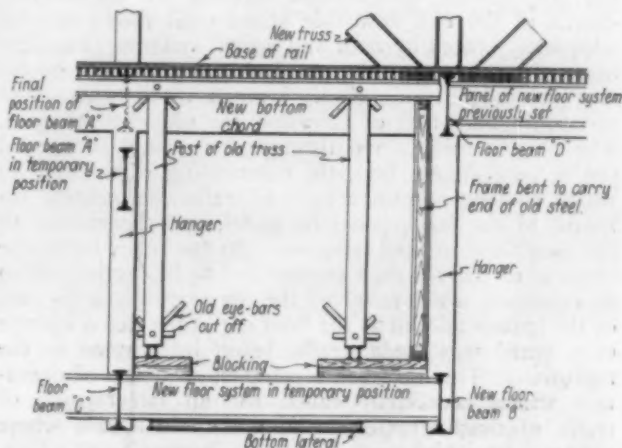


View at Old Pier 7, Showing Progress in the Removal of the Old Deck Span and Method of Supporting It From the New Superstructure

port this span until it was replaced by the new superstructure, a cantilever grillage consisting of six 24-in. I-beams was used, as shown in the sketch. This afforded a cantilever support for the end of the span, the moment produced by this cantilever being counterbalanced by an uplift on the first panel point of the adjacent span. These beams were burned off after the old Span No. 3 was removed and used as a grillage under the bearings of Span No. 2.

Heavy Traffic Interfered With Erection

The replacement of the old superstructure by the new involved an erection procedure that was subjected to serve limitations. The limited load-carrying capacity of the old spans precluded their use for supporting any part of the new spans during erection. Heavy traffic, an average of 54 trains during the eight-hour working time



How the Old Deck Spans Were Supported from the New Trusses

of the erection forces, imposed the necessity for a minimum use of the tracks on the bridge for construction purposes. The depth of water and the requirements of river shipping restricted the use of falsework to that required for the erection of the flanking spans, the channel span being erected by the cantilever method. However, falsework in the two flanking openings was provided only for the support of the new trusses for which piles could be driven from the falsework as it was advanced out into the river on either side of the old spans. This meant that there was no falsework under the old spans for their support during removal, a condition which imposed one of the most perplexing problems involved in the project and which was solved in an unusual manner as will be explained later.

After erecting a short section of the new superstructure at each end of the bridge by means of locomotive cranes with long booms, bridge derrick cars mounted on heavy girders spanning from truss to truss were hoisted piece-meal to the top chords at each end of the bridge where they served as crawler travelers for the erection of the greater part of the new structure. Interference with traffic was minimized by delivering the members on a material track supported on brackets cantilevered on the outside of the north truss.

Erect New Trusses Around Old Channel Span

The new trusses were spaced far enough apart to clear all parts of the old superstructure, the channel span being erected around the old channel span with provision for hanging the floor beams temporarily in a position below final location so that they would clear the floor of the old span and could serve as a means of supporting the old superstructure while it was being dismantled. The same general idea was applied to the removal of the old deck trusses which work also had to be conducted without the aid of falsework. But to carry these trusses from the new steel was a much more complicated problem because the under-side of these spans was over 20 ft. below base of rail. As a consequence, it was necessary to suspend long hangers from each bottom

chord panel point in order that the new floor could be hung low enough to pass under the old deck trusses.

This introduced several complications. It precluded opportunity for any lateral bracing in the plane of the bottom chords until the old deck trusses were moved, which made it necessary to delay the complete erection of the two cantilever arms of the new channel span until after the removal of the deck span so as to avoid developing appreciable compressive stresses in the bottom chords of the two new side spans until they could be adequately braced by floor and lateral systems. Furthermore, the removal of the old deck spans without excessive delays to traffic entailed much more complicated procedure than that of releasing the old channel span. The removal of this old through span could be carried out in two stages; first, the dismantling of the trusses which entailed no obstructions to traffic; second, the removal of the floor, panel by panel, and the raising of the new floor to final position. On the other hand, the removal of the old deck trusses had to be carried out in an operation which involved the removal of a large part of the trusses as well as the floor each time that a change of a panel was made, traffic being interrupted in the meantime. This involved a complex sequence of operation which necessarily called for an interruption of traffic of much greater duration than in a case where only a change of floor systems was involved.

How the Old Deck Spans Were Removed

The preliminary step in this procedure was to erect the new floor in the suspended position complete with the bottom laterals attached to the stringers. In addition, another new floor beam, "A," as shown in the sketch, was bolted between the hangers just low enough to clear the floor of the old span. The posts of the old trusses were blocked up on the new stringers and the old bottom chords and diagonals were burned off and removed.

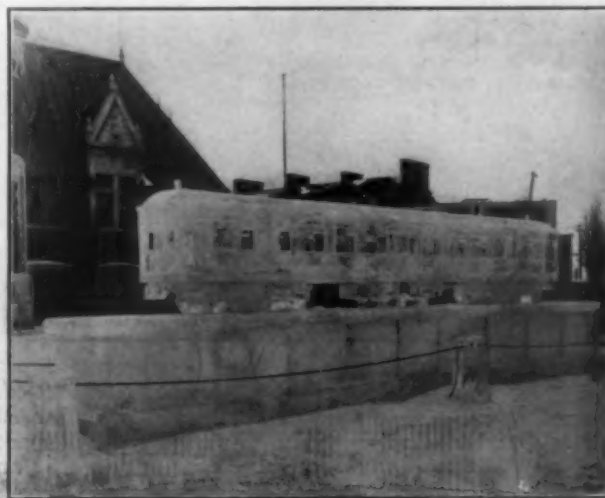
The removal of a panel of the old trusses involved the use of the bridge derrick traveler on the top chords and two locomotive cranes on the bridge tracks. The tracks were not dismantled but were simply held up by lines from the traveler until the operation was completed. The first step was to burn off the old truss members and floor into sections that could readily be lifted out between and outside of the tracks with lines from the locomotive cranes. After the old metal was all removed hitches were taken on the new stringers in such a way that they could be hoisted up as a unit. Then they were disconnected from the floor beams at "B" and "C" and floor beam "B" was disconnected from the hangers and allowed to swing out on slings previously attached to it so that the stringers would clear its top flange as they were lifted to final position and bolted to floor beam "D" of the panel previously set. In the meantime, the floor beam "A" had been disconnected from the hangers and was held by slings so that it could swing clear of the stringers as they were being raised and as soon as the stringers were connected to floor beam "D" floor beam "A" was raised to final position. After the remaining connections had been bolted, the track was brought to bearing on the new floor panel and traffic was resumed. The operation as described above entailed an interruption of traffic averaging about two hours.

The meeting ends of the cantilever arms of the channel span deflected about 13 in. This placed the lower panel point in mid span, at an elevation about 10¼ in. above the dead load position under continuous truss action. In addition, the bottom chords of the cantilever arms, being entirely in compression, and the top chords entirely in tension, were shorter and longer respectively

than they would be under the elastic conditions obtained in the continuous structure. To permit of a junction of the two arms under these conditions, the following provisions were carried out in the design and erection procedure: The west half of the superstructure, which is carried entirely on expansion bearings, was erected with the bearings rolled forward about 6 in. In addition, a section one foot long was left out of the top chord at the point of juncture in mid-span while the holes for 12-in. pins at the meeting points of the bottom chords were elongated 3¾ in. in the west arm.

The operation of closing the span was carried out as follows: Two 500-ton jacks on rollers were placed under each end floor beam. The ends were then jacked up and the 10½-in. bearing castings and 16-in. rockers were removed. The ends were then jacked down 2 ft. ¼ in. This brought the center line of the lower chord at the junction of the two arms to an elevation about 1 ft. 3½ in. above the level of the center line of the bottom chords over the two channel piers or about 10¼ in. above the dead load elastic line. The 12-in. pins were then driven in the slotted holes in the bottom chords and the 1-ft. sections of the top chords were placed. Following this the ends of the superstructure were jacked up until the top chords came to bearing at mid-span. The next step was to unlock the rockers on the west channel pier and jack the ends to normal elevation, replacing the 10½-in. castings and 16-in. rockers. Jacking for dead-load reaction was not done at this time but had to be done as a separate operation when the bridge was completed and the derrick cars had been taken from the top chords.

The design and construction of this bridge was carried out under the direction of Robert Trimble, assistant chief engineer; B. V. Sommerville, assistant to chief engineer, and J. F. Leonard, engineer of bridges and buildings, Pittsburgh, Pa., and under the general supervision of H. R. Leonard, chief engineer of bridges and buildings and A. C. Shand, chief engineer. F. J. Evans as representative of the office of the engineer of bridges and buildings, and L. E. Morrison as representative of the assistant chief engineer's office, supervised the detail of design and construction in the office and field. The Dravo Contracting Company of Pittsburgh had the contract for the substructure and the American Bridge Company had the contract for furnishing and erecting the superstructure.



C. P. R. Car Modeled in Ice, Palais Station, Quebec, on Occasion of Winter Carnival



The Lehigh Valley's "Chicagoan" Pulled by a Handsomely-Maintained Locomotive

Our Improving Passenger Service

Advance in past few years in providing fast, attractive, comfortable facilities on par with improvement in freight service

By James G. Lyne
Associate Editor, *Railway Age*

PART I.

RAILROAD passenger business has undergone a revolution in the past five years. To most persons this statement is not new, but it may connote to many simply the well-known fact of automobile competition and the 23 per cent decline in the volume of traffic, measured in passengers carried one mile between 1920 and 1925 and the continued slight decline in 1926. Fortunately, that well-known fact is only the darker side of the revolution. The brighter, equally important, and so far less-discussed side is the direction of railroad genius toward the development of that part of the business—the through, long-distance traffic—with which the automobile cannot so well compete. So inspired has

been the leadership here and so fruitful the results that the improvement effected is comparable to the widely-acknowledged increase in the efficiency of freight service.

Passenger train service, on through runs, has never before been, on the average, so swift, so luxurious or so safe as it is today. Passenger traffic men and all the railroad staff who have to do with the traveling public are continually exercising their ingenuity to perfect new comforts, more pleasing decorations, better schedules, wider opportunities for excursion travel and additional train services. And their efforts are bearing fruit. Travel de luxe, as measured by Pullman surcharge re-



The Dixie Flyer on the C. & E. I.

ceipts increased 5 per cent in 1926 as compared with 1925.

Moreover, it may well be felt that these statements are made of a movement which has not yet reached its peak but which is yet in full flow. Greater things still may be expected, since almost daily further improvements are announced.

Average Speed Increased

To be specific—just what has been done? To begin with, what of speed? No effort has been made to break any of the spectacular records of the '90's. Rather the progress has been in moving up the average speed of



Lounge Compartment on the New Santa Fe-Fred Harvey Club-Lounge Car

trains without scheduling any of them up to a point where operation would be hazardous or burdensome to the operation of the railroad as a whole. The most notable recent wholesale acceleration took place in November, 1926, when five hours were clipped from the schedules of limited trains between Chicago and Southern California. However, there are few important roads which have not made similar, or even more marked, reductions.

A few chosen at random from hundreds may be cited:

Pennsylvania, several schedules accelerated from 45 minutes to 2½ hours; Burlington, St. Louis-Denver schedule reduced 1 hour 35 minutes; Illinois Central, Chicago-St. Louis, reduction 1 hour 45 minutes; Florida, 2 hours 5 minutes; Delaware, Lackawanna & Western, Buffalo-New York, reduction from 1 to 2 hours; Rock Island, principal limited trains have schedules reduced materially; New York, New Haven & Hartford, 86 trains schedules reduced on the average of 15 per cent. The New York Central has reduced its schedules between New York and St. Louis and New York and Buffalo. The running time from Jacksonville to Miami on the Florida East Coast is three hours shorter than it was two years ago. Portland and Seattle are now one hour nearer to each other than they were a year ago via the Spokane, Portland & Seattle. St. Louis and Denver are five hours closer to each other via the Missouri Pacific and Denver & Rio Grande Western's "Scenic Limited."

These instances of acceleration are selected entirely at random from a list indicating hundreds of improved schedules, in which almost all the important railroads of the country have joined to some extent.

Many New Limited Trains

The railroads have added scores of new trains to their through services. Sometimes these schedules are entirely new. In other cases former schedules have been vastly improved so that practically a new service has been pro-

vided. An example of an entirely new train is the "Pocahontas" on the Norfolk & Western, which reduces the running time from Norfolk to Cincinnati by three hours. These new schedules, whether absolutely new or merely renovated and improved, generally bring with them new equipment and higher standards of service.

Some of these new trains—choosing again at random from a long list—are the "Lake Superior Limited," Northern Pacific; "La Salle," Chicago & Eastern Illinois; the "Louisiana Special," Missouri Pacific; the "Crescent Limited," Southern; the "Chief," Atchison, Topeka & Santa Fe; the "Sooner," Missouri-Kansas-Texas; the "Panorama Special," Denver & Rio Grande Western; the "Pine Tree Limited," Boston & Maine and Maine Central; the "Alouette," Canadian Pacific; the "Red Bird," Chicago Great Western; the "Cape Codder," New York, New Haven & Hartford; the "Inter-City Limited," Canadian National; the "Flamingo," Louisville & Nashville, Central of Georgia and Atlantic Coast Line.

Individuality in Equipment and Service

The attention which railway officers are paying to the building up of their passenger business is typified in the physical changes which they have made in the equipment of their limited passenger trains. When the government turned the roads back to their owners in 1920 passenger service was about as standardized as any service could be and, at that, standardized on a rather low level, when compared with present-day service. There was, as all will remember, about as much individuality in service as there is in that provided by the Post Office Department. The traveler either took what was offered or left it alone. Little attempt was made to cater to his artistic side, if he had any, or to make him feel as much in luxury as he would in a hostelry of the better class.

What has happened? The experienced traveler knows that the railroads are engaging in active, though friendly, rivalry with each other to improve their service and to mark it with individuality. Interior finishings, types of meals offered and other details of service differ now from road to road and a healthy competition exists among them to bring still further development. The Pullman Company is being encouraged in its desire to develop cars with new conveniences and novel decorations, the most outstanding example of which has been the new bedroom cars recently placed in service on the Michigan Central, the Pennsylvania and the Baltimore & Ohio (See article on page 1071). Passenger equipment is being kept uniformly cleaner. This spirit has not stopped with the cars, but now on many roads also includes the locomotives, and the idea of distinctive appearance, which first manifested itself in the interior of the trains, is spreading to the exteriors.

Making Equipment More Comfortable and Attractive

Following are some brief extracts of what just a few of the roads have to say about their passenger equipment improvements in the past few years:

Great Northern: "Oriental Limited" completely equipped with entirely new style observation cars, sleeping cars, dining cars and coaches. Color scheme throughout is gray-green with ornamentation in Chinese style.

Pennsylvania: "Broadway Limited" newly equipped from club to observation with cars displaying new interiors—Circassian walnut with green upholstery in sleeping cars, enhanced in club and observation cars by more decorative design. Sleeping cars equipped with thermostatic heating control, improved ventilation, porcelain lavatories. New dining cars decorated to blend with interior decorations of rest of train.

Northern Pacific: Chairs in the main lounge in observation cars differ from one another in shape and upholstery and a large davenport breaks the monotony. Windows are high enough

so that a tall man can look from them without stooping. Ladies' lounge suite has electric irons in addition to shower bath and usual fixtures.

Chicago, Burlington & Quincy: New cars in service on Denver Limited have casino-lounge in forward part with revolving chairs, decorative scheme modified Adam in green, buff, black and gold. Wide pilasters between windows, each panelled in green and surmounted by wide cap of Adam design decorated in black, red, green and gold. Ceiling in perfect harmony. The specially designed carpets harmonize, as do the lighting fixtures. Ladies' lounge in same color scheme with suggestion of Adam design, with chairs of walnut upholstered in green figured velvet. Just beyond this compartment is a miniature soda fountain with a Filipino attendant. Rear half of car is general lounge, with decoration in adaptation of the Pompeian in black, red, bronze-green and ivory. Between the windows are red panels with a vertical ornament of classical detail. Illumination furnished by 12 candelabra of Pompeian design. End of car has closed in sun-parlor.

Illinois Central: "Daylight Special" has ladies' lounge upholstered in velour and tapestry with smoking stands. Other trains have among other things, telephone connections at termini, portable card tables, new furnishings, leather upholstery for club cars, barber shops, market quotation service and 5:30 p. m. Associated Press news bulletin.

Boston & Maine: Specially decorated parlor-dining cars on "Minute Man" (*Railway Age*, February 12, page 463).

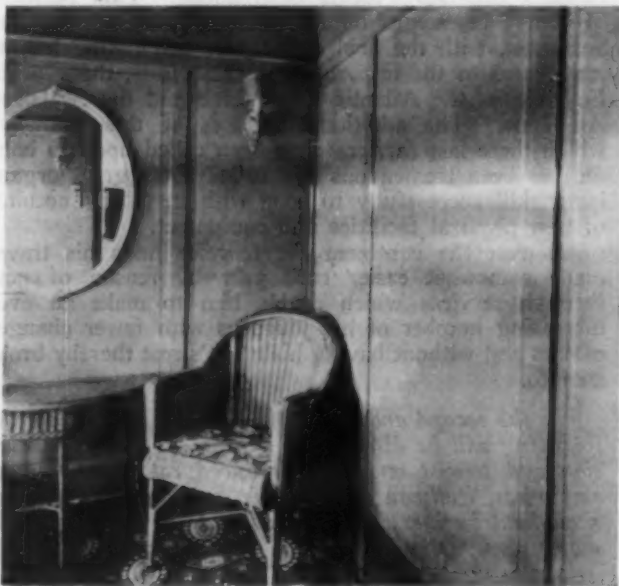
Denver & Rio Grande Western: "Panoramic Special" has observation car with windows 40 per cent higher than ordinary and provides davenport as well as armchairs, furnished in mahogany. Observation platform has a movable searchlight for the benefit of passengers who wish to view the scenery after dark.

Chicago, Rock Island & Pacific: "Golden State Limited" has thoroughly modern appointments throughout, provides sleeping quarters for dining car employees, has bath, maid service, barber, manicurist, valet, telegraphic news service, separate bath for train employees.

New York Central: New equipment of most modern type in all classes of passenger cars.

Southern Pacific: Spent an average of \$2,100,000 a year for the last four years for new passenger equipment, all modern.

Chicago Great Western: The "Red Bird" is a specially designed train throughout and its exterior, including the loco-



A Corner in the Ladies' Lounge, Broadway Limited, P. R. R.

motive, is specially colored in Venetian red with gold ornamentation and lettering.

Louisville & Nashville: Equipment on limited trains has all newest conveniences, specially decorated. Cars named for distinguished Southerners. Furniture in women's lounge of reed with upholstery of bright flower-patterned fabrics. Individual scheme of decoration for two trains, and one train has radio-receiving equipment.

Union Pacific: Four new types of cars recently placed in service, reclining chair, dining, club-library-observation and open-top observation, the latter having leather-upholstered seats.

Canadian National: About 65 new design Pullman cars have been placed in service in the last three years, only 25 of which were replacements, the rest being for new service. Several trains equipped to receive radio programs. Extensive program of modernization of equipment proceeding.

The above examples are fragmentary in the extreme. Their purpose is only to show the tendency. Practically every large road on the continent can tell a somewhat similar story. Moreover, a tendency toward experimen-



Main Lounge, Observation-Club Car, "North Coast Limited"

tation in equipment design and interior furnishing, with the healthful spirit of friendly inter-railroad competition which goes along with it, indicates more than an interest in the cars alone. Wherever one finds a railroad looking around for ideas in design and decoration and giving them a trial, it follows without question that that railroad is also looking around for new ideas in service as well. Progress in one means progress in the other, and the genius of this whole movement to improve through passenger service can find no more accurate gage than the rapid strides that have been made in the appearance, comfort and convenience of the equipment.

Locomotives Cleaner, Brighter, More Decorative

Cars alone and the interior of cars particularly, while they have so far received most of the attention in the passenger service renaissance, have not by any means pre-empted all the attention. There seems to be a general movement everywhere toward improving station facilities, in providing a better-riding roadbed, additional running tracks, more automatic signaling, easier handling of trains and in keeping the railroads neater. There is hardly a road in the country today that has not improved the appearance of its locomotives during the past few years both by keeping them cleaner and by using better grade paints and varnishes and applying decorations of some kind. A cursory glance at some of these also may show the way in which the weather vane is pointed.

Chicago Great Western: The locomotive of the "Red Bird" has been rebuilt English style (see *Railway Age*, October 2, 1926, page 643) and is painted Venetian red striped in gold to match the cars. Other locomotives are being rebuilt in this style except for color.

Southern: New Pacific type passenger locomotives have some parts painted green. Boiler jackets, driving rods, etc., are highly polished.

Delaware & Hudson: Certain passenger locomotives are being turned out of the shops highly polished and with all outside and cab fittings nicked; piping concealed; side rods and other

motion work polished; foot boards and tires painted with aluminum paint.

Erie: Enginemen with excellent records have their names on cab in red and gold. Passenger power kept highly polished, including brass work; many locomotives have polished brass and copper work.

Baltimore & Ohio: New passenger locomotives named and painted olive green, striped in red and gold.

Union Pacific: Cylinder heads and side rods polished, satin finish. U. P. monogram painted in color on locomotive tenders. Chicago, Burlington & Quincy: Smoke-boxes are jacketed. Trade mark in color is painted on engine tenders. Engines are being varnished as an experiment.

Cleveland, Cincinnati, Chicago & St. Louis: A passenger Pacific has, as an experiment, been lacquered battleship gray, striped in aluminum and black.

Chicago & North Western: High quality of varnish is used and power is kept "spick and span." Monogram is painted on tender in color. General manager says: "The appearance of the passenger power on the C. & N. W. Ry. is better at the present time than I have known it to be for 15 years."

Lehigh Valley: Outside fittings, including cylinder head casings, nicked or polished copper or brass. Tops of headlights adorned with small eagle or other figures. Name plates appear on locomotives handling limited trains. Boiler jackets varnished a blue steel color.

There has not as yet been any considerable move toward the adoption of brighter colors for the exterior of passenger cars, to replace the conventional dark green on the roads on which it is standard. However, there has been a noticeable attempt to keep the cars to a higher standard of cleanliness and to use higher grade finishes. There are, of course, the roads which have as standard colors other than the prevailing green, among them, the Pennsylvania, the Soo Line, the Canadian Pacific, the Milwaukee and the North Western. All these roads make an effort to keep their cars up to a standard of cleanliness which will give effect to the brighter colors which they use. The Alton and the Great Western, while the dark green is their standard color, have limited trains that are finished in red.

Many New Through Sleeping Car Lines

More trains, faster service, more comfortable and more attractive equipment—these are some of the improvements which have been made. But there are many others. One of the most outstanding is the increase in through sleeping car service, materially augmenting the number of points between which one may travel without change of cars and without being disturbed at unseemly hours of the night. Overnight Pullman service is now offered between metropolitan centers and almost all outlying cities of any importance within distances of 100 to 400 or 500 miles.

Through Pullman service operating over several connecting lines link most of the important centers of the East, Middle West and South with the principal Florida cities. A through train is now operated from Washington to Montreal via the Pennsylvania, the New Haven, the Boston & Maine, the Central Vermont and the Canadian National. Formerly passengers desiring to make the journey between these points were forced to change trains at New York.

A few of these recent installations of new through Pullman service are:

Louisville to Toledo and Detroit, via the Pennsylvania.

Omaha to Los Angeles via the Burlington and the Santa Fe. Toronto to Philadelphia via the Pennsylvania and the Canadian Pacific, the Toronto, Hamilton & Buffalo and the Michigan Central.

St. Louis and Los Angeles, Chicago and Houston, Chicago and Hot Springs, Ark., Sioux City, Ia., and Kansas City, via the Missouri Pacific and the Chicago & Alton, the Texas & Pacific, the Southern Pacific and the Chicago & North Western.

Memphis to New York via the Illinois Central and the Baltimore & Ohio.

Increased interchange with the Michigan Central in New York-Detroit service by the Lehigh Valley, likewise with the Canadian National to Toronto and Chicago.

Twin Cities to Houston and San Antonio via the Missouri-Kansas-Texas and the Chicago Great Western.

Chicago and Oakland via the Rock Island-Southern Pacific and the Denver & Rio Grande Western.

The Maine Central in the summer season of 1926 handled nearly 800 more parlor and sleeping cars in interchange service than it did in the previous season.

The Louisville & Nashville now operates 99 through Pullman routes with connecting lines—an increase of 31 over previous service.

Chicago to Winnipeg, Jasper Park and Vancouver via the Chicago & North Western and the Canadian National.

Chicago and Hot Springs, via the Rock Island and the Illinois Central.

St. Louis, Tulsa, Oklahoma City to Amarillo via the Frisco and the Rock Island.

Between San Francisco and El Portal and Lake Tahoe via the Southern Pacific and the Yosemite Valley.

Boston and Chicago via the Boston & Maine's "Minute Man" and the New York Central.

As stated previously, of all the new through interline Pullman services established in the past few years probably those to Florida are most extensive. There is hardly a large railroad in the East, the Middle West or Southeast which does not, in season, handle some through cars for Florida destinations. This business of course converges on the various roads serving the Southeast, with the final delivery or originating left in most cases to the important Florida roads, the Florida East Coast, the Atlantic Coast Line and the Seaboard Air Line. The additional services of this character which these last carriers have been called upon to handle has been tremendous and called forth great organizing skill successfully to cope with it, to say nothing of new physical facilities and equipment.

All over the continent the traveler finds his travel made somewhat easier each year by reason of new through services which enable him to make an ever increasing number of his journeys with fewer changes of cars and without having his night's rest thereby broken into.

[In the second and concluding part of this article the following will be discussed: Dining car service, excursion and tourist and other reduced rates, training of employees, Pullman reservations, suburban traffic, local short-haul business, and railroad use of buses and rail motor cars. It will appear in an early issue.—EDITOR.]



The Northwestern Has Placed Its Monogram, in Color, on Passenger Locomotive Tenders



Ljungstrom Turbo-Condensing Locomotive Built by Nydquist & Holm for Service in Sweden

Europe Shows Way to Increased Motive Power Efficiency

Marked trend towards more extensive use of high steam pressures and turbo-condensing locomotives

IN an address before the Western Society of Engineers at Chicago on March 21, C. B. Page, manager of the Steamotor Company, Chicago, discussed the subject, "Recent Motive Power Developments in Europe," maintaining that European countries are now looking to high steam pressures of 850 lb. or more and turbo-condensing type locomotives for further economies in the use of locomotive fuel. He said that developments now under way promise thermal efficiencies of 17 to 19 per cent, as compared with the 7 or 8 per cent common in the best American practice, and expressed the opinion that 4,000 to 5,000-hp. steam locomotives of the turbo-condensing type, essentially smokeless and noiseless, and to a considerable extent independent of enginehouse service, can be built to American specifications at a price which will make this type of power commercially practicable.

Mr. Page is particularly well qualified to appraise the sentiment in Europe regarding railroad motive power because he recently went over again the same ground with the late W. H. Finley in the latter part of 1925, when both men spent two months visiting the principal locomotive works in England, France, Switzerland, Germany and Sweden, and interviewed many railroad executives, directors of engineering works, consulting engineers and leading business men. Mr. Page's paper, which was fully illustrated with lantern slides and moving pictures, was supplemented with last-minute information furnished by G. J. Melms, consulting engineer, Paris. An abstract of the paper follows:

European Motive Power

By C. B. Page

Manager, The Steamotor Company, Chicago

The outstanding Diesel locomotive built in Europe in 1926 was the second Russian locomotive designed by Prof. George Lomonosoff and Dipl. Ing. Dobrowolski, described on page 139 of the *Railway Age* of July 24, 1926. The essential difference from its predecessor lies in the driving mechanism, the first locomotive being fitted with electric transmission and the

second with a three-speed constant mesh gear transmission and magnetic clutches. Backward motion is obtained by reversing the engine. The thermal efficiency of the engine and the overall efficiency of the locomotive as determined by extensive laboratory tests, were 34 per cent and 29.4 per cent, respectively. This last compares with 25 per cent for the first locomotive with electric drive.

The German State Railways are now projecting a 1,600-hp. Diesel locomotive with gear drive or six speeds forward and reverse and air clutches. The engines are to be four in number, four-cylinders each, four-cycle, and supercharging, which is estimated to improve the overall efficiency by 15 per cent. In the meantime, the Esslinger Machine Works, near Stuttgart, Germany, is completing a compressed air drive Diesel locomotive of 900 i. hp. and is projecting a 2,500-hp. Diesel with a combination direct and compressed air drive.

In his paper a year ago,* Mr. Finley stated that the consensus of European opinion was against electric drive for either gas or oil power. As regards the larger size Diesel locomotive, Prof. Lomonosoff is probably the foremost European authority. It is notable that in his second locomotive he preferred mechanical drive to the electric and in a recent magazine article he favors the former for regular train operation while conceding that the latter possesses advantages for switching service. Certain it is that the trend to mechanical transmission is now even more pronounced than a year ago. In fact, every authority recently interviewed pronounced in favor of the mechanical type, recommending it even for switching, at least to the extent of stating that before gas and oil power could be regarded as attractive for this service, it would be necessary to perfect some type of mechanical drive.

Why Europe Favors Mechanical Transmissions

The question is often raised as to why Europe is so favorable to mechanical transmissions while in the United States the whole commercial trend has been to a larger use of the electric. I have searched long and diligently for the answer. It seems to me that, primarily,

* See the *Railway Age* for February 27, 1926.

Europe uses gas and oil power solely from an economy and efficiency standpoint. They are primarily interested in such matters as first cost, weight, maintenance, depreciation and operating expense. These items must be scaled down to rock bottom if gas and oil power are to compete successfully with steam. In relation to coal, oil is more expensive than here; interest rates are higher; reduction in weight is considered by them of greater importance, and wages are less. Relatively they have no smoke problem, or at least are not particularly concerned with it, hence the Diesel locomotive is pitted in direct commercial competition with steam power. In view, then, of the different conditions existing there and here,



View Showing Fan Arrangement on Tender of Beyer & Peacock Turbo Locomotive

the inference should not be drawn that because Europe insists upon the mechanical transmission, the electric drive is not the more suitable to American requirements.

And yet on the other hand, and of great significance, is the recent order placed by a large New England railroad with Krupp for a 1,400-hp. combined freight and passenger Diesel locomotive to be fitted with the same type of transmission built into the second Russian locomotive, namely, constant mesh gears with magnetic clutches, the only difference of moment being that the number of speeds is increased from 3 to 4.

Broadly, what is the European trend in the application of gas and oil power to locomotives? As to road locomotives of 1,000 hp. and over, the moderate interest of a year ago continues without change. Construction of small switching locomotives has practically ceased, due, I believe, to the inefficiency, cost and weight of transmissions, both electric and mechanical, so far used.

Marked Progress in Use of Steam

During 1926, progress in steam engineering as applied to motive power was particularly marked. Almost every locomotive works of prominence was either bringing to a conclusion and testing some ambitious new design—in many cases quite revolutionary—or had its engineering department working on similar undertakings. Activity was, however, not confined to the entirely new and novel, but embraced, as well, refinements and improvements to conventional construction. It is no reflection on the Diesel locomotive and its prospects to credit to steam a veritable renaissance. The art is, of course, over a century old, is more extensively practiced and perhaps immediately more fruitful. Moreover, it is prompted by the feeling that locomotive engineering, as regards thermal efficiency, has so far lagged behind stationary

and marine practice as to become almost a spectacle. Something had to be done!

Much progress was made in standardizing construction and types, especially in Germany where, under the auspices of the railway administration, the various locomotive builders some time since established a standardization office with a permanent organization, with the result that 210 former locomotive types have been condensed to 16, which number will be still further reduced as experience justifies. One of the 16 is the new standard German express locomotives, a 4-6-2 type, according to American designation, rated at 2,200 to 2,400 hp, maximum, speed 70 miles per hr. at 292 r.p.m.

Main steam poppet valves of both the Lentz and Caprotti types seem to have passed the experimental stage and are being widely adopted. The former are particularly popular in Austria and Germany and to a lesser extent in Italy. The latter, originated in Italy, are now used extensively by the Italian State Railways and are being tried out in England.

Mr. Finley's paper of a year ago commented on the marked trend to higher steam pressures for locomotives. This trend was confirmed in 1926. Every locomotive manufacturer, railroad executive, engineer and general engineering counselor interviewed by this writer, affirmed that higher steam pressures for motive power are so close at hand as to constitute almost a fact accomplished. By higher steam pressures the Europeans do not mean 250 to 400 lb. but 850 lb. and over. In this respect locomotive engineering is only following the practice already established by the stationary engineer in which our own American engineers are taking such a conspicuous part.

The 850-lb. working pressure locomotive built by Henschel & Son, Cassel, Germany, under the patents and to the designs and specifications of the Schmidt-Heissdampf Gesellschaft is well known and has been so fully described in the American technical press that no added details are necessary. This locomotive was exhaustively tested both in the laboratory and in regular service by the builders and was lately turned over to the German railways for official acceptance. R. P. Wagner, chief counselor, locomotive department, German State Railways, under date of February 8, reported this locomotive then under test. S. Hoffman, managing director of the Schmidt Company, states that their trials showed a gain in economy of at least 25 per cent as compared with superheater locomotives at ordinary pressures.

Again under the patronage of the German railways, the Berliner Machine Works of Berlin are developing a 2,500-hp. piston locomotive featuring the Loeffler system. In this system the combustion chamber is surrounded by tubes in which saturated steam at 1,420-lb. pressure is circulated at high velocity by means of a steam pump, the resulting highly superheated steam being used in part directly in the high pressure cylinder and the balance returned to the drum from which it was drawn for the purpose of generating additional steam. Exhaust from the high pressure cylinder is discharged to a large receiver against a maximum pressure of 257 lb. From this receiver the steam is re-superheated on its way to the low pressure cylinders. Mr. Wagner, already quoted, is authority for the statement that a fuel saving of 45 per cent is expected from this locomotive when built.

A third high pressure locomotive system is being developed by the Swiss Locomotive & Machine Works of Winterthur, Switzerland. No details of this system are yet available although it is understood that a test plant is now in operation. The working pressure on the high side is given as 60 atmospheres, or 850 lb.

Turbo-Condensing Locomotives Favored

There is a considerable historical background to the present intensive European activity in turbine-driven condensing locomotives, record of which will be found in the engineering libraries. Interest centers in two types, Ljungstrom and Zoelly, the first models of which were produced about four years ago.

These two locomotives made such an impression that several of the great firms of Europe, viz., Nydquist & Holm, Trollhattan, Sweden; Beyer-Peacock & Co., Ltd., Manchester, England; Fried. Krupp, Essen, Germany; and Henschel & Son, Cassel, Germany, took out licenses and proceeded with the design and construction of locomotives of various sizes. J. A. Maffei, of Munich, joined this group but along lines independent of either Ljungstrom or Zoelly. Last year saw the completion of all these locomotives, so that they are now either in regular service or under test.

The 2,000-hp. Krupp-Zoelly type locomotive in the fall of 1926 had been brought to a full commercial standard and was ready for its acceptance test by the German Railways, for which system the locomotive had been built. These tests, according to a report from Berlin, dated February 8, 1927, were then being run.

Henschel & Son's development has been along somewhat different lines, namely, the utilization of the exhaust steam from a piston locomotive in a turbine drive. A 1,000-hp. German Railway locomotive is used for this purpose. The tender, however, is entirely new, providing as it does turbine drive, condensers and coal bunker. This general scheme is included within the scope of the Zoelly system and Escher-Wyss turbines are used. Last November, construction was nearly completed and the complete unit should now be on test.

In the fall of last year, J. A. Maffei of Munich, completed, to order of the German Railways, a 2,500-hp. turbo-condensing locomotive which in general appearance has many points of similarity to the Zoelly system construction, but which differs considerably in detail. The main turbine is a combination action and reaction type built in the Maffei works. The reduction gear embodies new ideas, as does also the re cooler. A full description of this locomotive appeared beginning on page 295 of the *Railway Age*, issue of January 22. This locomotive was subjected to extensive builder's trials and is now, according to cable dated March 14, in express train service between Munich and Augsburg, distance about 70 miles northwest of Munich.

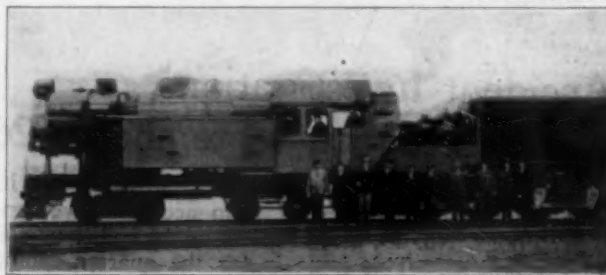
Early in 1926, Nydquist & Holm, licensees under Ljungstrom, had completed and delivered a 1,750-hp. turbo locomotive to the order of the Argentine State Railways, for service across the Argentine desert. All of the contract requirements for this locomotive have been met and after a year of service as required by its terms has been approved. Its final acceptance by the Argentine State Railways depends now only on a final inspection.

The same company has just recently completed its second locomotive, this time of 2,000-hp. to the order of the Swedish State Railways. During February a test run with a train weight of 506 tons was made between Stockholm and Upsala. The average speed maintained was 47 miles an hour; maximum power developed at the drawbar, 1,400 hp., everything working perfectly. According to a letter, dated February 27, 1927, this locomotive was then scheduled for regular service between Stockholm, Sweden, and Bollnas, a distance of 196 miles, a daily round trip of 392 miles on a time card, including stops, of 12 hr. 22 min. According to a cable received

March 21, this locomotive has now been officially accepted by the Swedish State Railways.

Last fall Beyer-Peacock & Company, Ltd., completed a 2,000-hp. Ljungstrom type locomotive. After its test by the builders this locomotive was turned over to the London, Midland & Scottish for passenger train service between Rugby and Manchester, where, according to reports, it was satisfactory in every way. It is shortly scheduled for express train runs between Manchester and London and later for non-stop service between London and Glasgow.

While conforming in main essentials to the ideas originally worked out by Ljungstrom, this locomotive embodies many improvements and refinements over the first construction. Moreover, it has been much simplified, especially in its controls. It was my privilege to ride in the cab of this locomotive last November on a test trip of 46 miles. At a maximum speed of 56 miles an hour, my seat was almost as steady as a chair in a Pullman. The acceleration is smoother than an electric because torque is continuous without interruption from zero to maximum speed. The only noise that could be heard was the click of the wheels on the rail joints and the whistling of the wind. I tried to catch the whine of the drive gearing but it was scarcely discernible. In spite of poor firing and a rather poor grade of American coal, the run from end to end was nearly smokeless. A



Ljungstrom 1,750-Hp. Turbo-Locomotive for Argentine State Railways

little gray smoke was emitted at each firing but this almost immediately thinned out to a light blue vapor.

The explanation of this smokeless condition is that the builders, with the primary object of getting more economical fuel consumption, have improved the proportions of the firebox and introduced two whirling blasts of highly pre-heated air over the fire. There is needed only the fitting of a mechanical stoker or provision for burning pulverized coal to so reduce the smoke as to satisfy the most particular.

Tests and service performance of the turbo-condensing locomotives to date, substantiate the substance of the claims of the inventors and builders, of which the following are a few:

Continuous driving torque resulting directly in improved adhesion.

A higher initial starting torque.

Improved roadability.

A gain in economy, ranging from 30 to 50 per cent, depending upon design, capacity and equipment, with a corresponding increase in overall efficiency up to 16 per cent.

Elimination of boiler washing and scaling.

Longer runs.

Less wear on the track.

Greater comfort for the passengers.

Improved conditions for engineman and fireman.

Decreased cost of maintenance.

Higher train speeds.

First cost is given as 1.8 times to twice that of the modern superheater piston locomotive. Savings, however, are calculated to wipe out this additional cost in from 3½ to 4 years.

I have set forth above what appears to be just the

beginnings of the commercial development of the turbo-condensing locomotive. Krupp has completed designs for an 850-hp. working pressure turbo-locomotive of 2,000 hp. The boiler is of the watertube type, following rather closely some previous marine practice. Henschel & Son has plans complete for a 2,000-hp. rigid frame locomotive. Maffei is projecting a 2,500-hp. locomotive utilizing even higher working pressures than heretofore discussed. Beyer-Peacock & Company, Ltd., is looking forward to a very ambitious production schedule. One group in France headed by the great Schneider Works, is in readiness to proceed with the construction of Zoelly type turbo-locomotives, while another group is being formed for building under the Ljungstrom patents.

Main Dependence on Improved Steam Locomotive

Today, the majority of the best-informed European opinion, while anticipating no immediate and wholesale replacement of the present day steam locomotive, does believe, nevertheless, that motive power thermal efficiency must and will be brought to a closer parity with stationary and marine performance. The Diesel locomotive with some form of mechanical drive is conceded a place in the new picture. However, main dependence, as now, will be placed on steam power very much improved in thermal efficiency, possibly quite different in form from our present day conventional type but still a steam locomotive.

Accident Investigations, July, August, September, 1926

THE Interstate Commerce Commission, in its quarterly summary of train accident investigations, No. 29, gives reports on 14 collisions and 12 derailments. This issue is for the quarter ending with September 30, 1926, but it includes also a derailment which occurred in April.

Following is a list of the cases investigated, the numbers at the left being those of the government record:

Train Accidents Investigated—July-September, 1926

| | | | | |
|-------|------------------------------|--------------------|----------|---|
| 1257. | Pennsylvania | Delair Jct., N. J. | Apr. 8 | D |
| 1270. | Canadian Pacific | Sutton, Vt. | July 9 | D |
| 1271. | Gulf, Colo. & Santa Fe | Heidenheimer, Tex. | July 15 | C |
| 1272. | Louisville & Nashville | Canton, Ga. | July 15 | D |
| 1273. | Baltimore & Ohio | Deer Park, Md. | July 26 | C |
| 1274. | Spokane, Port. & Seattle | Lyle, Wash. | Aug. 3 | D |
| 1275. | Atchison, T. & Santa Fe | Waynoka, Okla. | Aug. 3 | C |
| 1276. | Louisville & Nashville | Drivers, Ill. | Aug. 12 | D |
| 1277. | Long Island | Calverton, N. Y. | Aug. 13 | D |
| 1278. | Southern | Stockbridge, Ga. | Aug. 17 | C |
| 1279. | Great Northern | Deer River, Minn. | Aug. 20 | D |
| 1280. | Chicago, Burl. & Quincy | Wyanet, Ill. | Aug. 22 | D |
| 1281. | Atchison, Top. & Santa Fe | Thoreau, N. M. | Aug. 25 | C |
| 1282. | Chicago, R. I. & P.—Penn. | Chicago, Ill. | Aug. 29 | C |
| 1283. | Blue Ridge | Anderson, S. C. | Sept. 1 | D |
| 1284. | Detroit, Monroe & Tel. S. L. | Monroe, Mich. | Sept. 2 | C |
| 1285. | Baltimore & Ohio | Foley, Pa. | Sept. 2 | C |
| 1286. | Denver & Rio Grande Western | Waco, Colo. | Sept. 5 | D |
| 1287. | Chicago Great Western | Arispe, Iowa | Sept. 5 | C |
| 1288. | Long Island | L. I. City, N. Y. | Sept. 5 | C |
| 1289. | Chicago & North Western | Clybourne, Ill. | Sept. 6 | C |
| 1290. | Chicago, Mil. & St. Paul | Tatanka, S. Dak. | Sept. 7 | D |
| 1291. | Missouri Pacific | McGehee, Ark. | Sept. 13 | D |
| 1292. | Chicago & North Western | Chicago, Ill. | Sept. 16 | C |
| 1293. | New York Central | Holley, N. Y. | Sept. 24 | C |
| 1294. | Central of N. J.—L. V. | Bethlehem, Pa. | Sept. 27 | C |

The four reports covering the month of July were abstracted in the *Railway Age* of December 18, page 1210, and the nine covering the month of August in the issue of February 26, page 592. The 12 reports for September are abstracted herewith.*

September Train Accidents

Blue Ridge, Anderson, S. C., September 1.—(This road is a part of the Southern Railway System and the

* Investigations of preceding quarters were reported in the *Railway Age*, November 13, August 28, August 14 and July 10.

trains mentioned came from that road.) Eastbound passenger train No. 18 moving at about 12 miles an hour was derailed at a facing point switch and the locomotive and tender were overturned. The fireman was killed and one other employee injured. The inspector believes that the switch was loose because of having been run through by another train; and there is presumptive evidence that this was westbound train No. 17, run by the same crew, which had passed over the line a few hours before. It was found that at Anderson some of the switches are not locked, that the tracks are used as public thoroughfares and that switches have on many occasions been found misplaced. All of the switch stands are of the low type with no targets and no lamps; "an unsafe condition which should be remedied with the least possible delay."

Detroit, Monroe & Toledo Short line, Monroe, Mich., September 2.—Collision of northbound and southbound electric cars, badly damaging both cars. Nine passengers and a student conductor were killed and 32 passengers and four employees were injured. The cars should have met by schedule at Pine, neither train having right beyond Pine; but both the conductor and the motorman of the southbound car forgot the meeting point. Both conductor and motorman are said to have been experienced employees (although the report says that the conductor had been in the service only nine months). The motorman had been on duty more than 16 hours in the aggregate, in the 24-hour period prior to the collision, and such work was in violation of the hours of service law; and he had been suffering from toothache so that he had little rest when off duty. As a result he was nervous and depressed; and this is taken to have been the cause for his forgetfulness; but no excuse is found for the conductor's oversight. He seems to have been confused by having received an order to meet another northbound train at Pine.

Baltimore & Ohio, Foley, Pa., September 2. 11:58 p.m.—Westbound passenger train No. 7 traveling at about 20 or 25 miles an hour, collided with eastbound freight No. 92, moving very slowly, badly damaging both of its two locomotives and doing other damage; the engineman, the fireman and the flagman, all on the leading engine of No. 7, were killed, and one passenger and three employees were injured. The freight train was running on the westbound track and ran beyond the cross-over at which it should have cleared train No. 7 because of the failure of the engineman and the fireman properly to read a dwarf signal. This signal showed purple but the engineman (and fireman) claimed that it was yellow. He was subsequently given an eyesight test but his color perception was not found defective. The engineman's statements as to speed and brake power are found inconsistent with the fact that with a pressure of 75 lb. remaining in the brake pipe, he was not able to reduce the speed of his train until he had run 800 ft. beyond the point where the engine should have entered the cross-over. The report seems to carry the inference that perhaps the engineman and fireman did not observe the signal at all, and that they noticed nothing wrong until they realized that the engine did not enter the cross-over.

Denver & Rio Grande Western, Waco, Colo., September 5.—Eastbound passenger train No. 2 derailed on a sharp curve at about 45 miles an hour; 30 persons killed and 54 injured; cause, excessive speed. This derailment was reported in the *Railway Age* of September 11, September 18 and October 23.

Chicago Great Western, Arispe, Iowa, September 5.—Eastbound passenger train No. 54—locomotive and four cars—moving at about 20 miles an hour, collided with westbound locomotive No. 340, running without train,

and moving at about 25 miles an hour. Both locomotives were badly damaged and one baggage car was wrecked. The fireman of the light locomotive was killed and four other employees were injured. The passenger train had an order to meet the westbound engine at Arispe but ran more than two miles beyond, the conductor, engine-man and brakeman all forgetting the order, which had been delivered to them only 30 minutes prior to the collision. The engineman thinks the reason for his forgetfulness was the fact that he had passed over a soft spot in the track and was engaged in writing a message about it, to be sent to the dispatcher. The conductor and the brakeman, even when their train struck the westbound engine, failed to recollect the order, and thought that their train had collided with the rear of some proceeding train.

Careless in Pushing Cars

Long Island Railroad, Long Island City, N. Y., September 5, 10:30 p.m.—In a side collision in the Eighth Street Yard, where two switching crews were at work without properly consulting each other, a brakeman was thrown off the top of a car and was killed. The men in charge of engine 264 pushed cars in at the west end of an occupied track and did not take care to see that they had pushed the string of cars out at the east end; this was the cause of the collision.

Chicago & North Western, Clybourne, Ill.—September 6.—Rear collision of passenger trains, killing five and injuring 200 passengers. Train 734 running under a cautionary manual signal was not run with speed under control. This collision was reported in the *Railway Age* of September 11, September 18 and November 13.

Chicago, Milwaukee & St. Paul, Tatanka, S. D., September 7, 12:40 a.m.—Westbound passenger train No. 15, moving at about 40 miles an hour, was derailed at a facing point switch and the locomotive was overturned. The engineman and the fireman were killed and one other employee was injured. The derailment was due to a partly open switch which, says the report, apparently was due to malicious tampering. The switch light had been extinguished; and as the line is straight, the engineman ought to have noted the absence of any light indication; but as both engineman and fireman were killed, the reason why this was not done cannot be known.

Missouri Pacific, McGhee, Ark., September 13.—11:55 p.m.—Northbound passenger train No. 102, moving at about 45 miles an hour was derailed at a point where a joint in the track had been maliciously disconnected. Engineman and fireman killed, 20 passengers and one employee injured. The inspector was not able to determine by whom the rail was removed.

Signal Not Properly Obeyed

Chicago & North Western, Gladstone Park, Chicago, September 16, 6:25 p.m.—An eastbound freight train moving at ten miles an hour or less, ran into part of a derrick car swinging diagonally across the track, and the locomotive was overturned; two cars also were wrecked and the fireman was killed. The derrick car was part of a wrecking train on the westbound track and a brakeman had flagged the freight; but the freight engineman did not properly obey the brakeman's signal. The engineman had seen that all automatic signals were clear for him (the line being straight) and, assuming because of this that the road was clear, he did not properly heed the hand-motion signal of the brakeman. The conductor of the work train is held to have manifested poor judgment, when, after having opened a cross-over switch, in order to set signals against the eastbound train, he soon closed

the switch, thus clearing the signals, when a train was approaching.

New York Central, Holley, N. Y., September 24, 3:40 p.m.—Switching engine No. 485 moving westward on the eastbound track, at low speed, collided with an east bound extra train consisting of locomotive 3373 and 28 empty express cars, the latter train moving at 20 or 25 miles an hour. Engine 3373 was overturned and the other one was pushed back about 125 ft. The tender of this engine (No. 485) and the two cars which were attached to it, broke away and ran back about a third of a mile down grade. The fireman of 3373 was killed. The eastbound train was running under a permissive signal given by the manual block signalman at Fancher, about three miles west of Holley, with right to Brockport, five miles east of Holley (the block office at Holley being closed after 3:30 p.m. and the signal placed in the proceed position); but from a point about 4,855 ft. west of Holley, the train had the benefit of the indication of an automatic block signal (indicating clear) the track circuit of which extends about 1,364 ft. east of Holley. Under this condition the train was not moving under full control and, the westbound engine not having entered the track circuit at the time the eastbound passed the automatic signal, the track circuit afforded no protection. The brakeman of the switching train who was sent out to flag eastbound trains, had torpedoes but did not use them, and the inspector finds him primarily responsible for the collision. The evidence was not entirely clear, but the report says that this man was not particularly energetic in his efforts. He was in or near a group of trackmen and it is possible that the engineman of 3373 did not know that he had been flagged. The idea that the proceed indication at the automatic block signal relieved the engineman from running under control, which the order required him to do all the way to Brockport, is a wrong interpretation of the rule, and the officers of the road are called upon to take steps to eliminate such misunderstandings as quickly as possible. The operator at Holley had closed his office without permission from the dispatcher, and while the block was not clear. Other bad practices are noted in the report.

Central of New Jersey, Bethlehem, Pa., September 27.—Collision of passenger trains, No. 306 of the Central running into No. 6 of the L. V. at the crossing; eight persons killed, 40 injured. This collision was reported in the *Railway Age* in the issues of October 2 and November 6.

April, 1926

Pennsylvania, Delair Junction, N. J., April 8.—Southbound passenger train No. 1077, nine Pullman cars, enroute from New York to Atlantic City, was derailed on a curve of 12 degrees, 30 minutes, while moving at from 30 to 40 miles an hour, and the locomotive was overturned. The wooden super-structure of the first car was wrecked. One passenger, the engineman and the fireman were killed and 170 passengers and one employee were injured. This derailment was due to a broken rail and the commission, following an extended study of rails, issued its report on September 11. The fracture in the rail began at a bolt hole and the final break is believed to have been caused by a train which preceded No. 1077. A gap of six inches was left in the track. The signal circuit through the rails was not broken, as the gap was between the two ends of a bond wire. The report says that attention is being given by the railroad company to the matter of bonding, and that it is expected that an improved method will be adopted which will eliminate this danger.

Rushing and Roaring Through The Foggy Night

*A tenderfoot rides a Chicago & Alton fast passenger
locomotive from Springfield to St. Louis*

By Earl B. Searcy

Member of the Illinois State Senate

IT was one of those dismal, murky, depressing nights, the like of which, we used to say back in reporting days, was good for a murder. Often, the prophecy came true. Which, from a newspaper standpoint, was an asset for the occasion usually betokened an enticing banner line for page one of the morning edition.

Eleven o'clock had come and the deeply interested trainmaster and I were gazing intently up through the yards for the piercing headlight of No. 79, the Chicago-St. Louis Fast Mail. It was ten minutes overdue, then.

"You're in for a ride tonight, boy," Ennis, my companion, assured me.

"Why?" I queried, in reply. "They won't attempt to make up lost time tonight, surely?"

"Depends on who's pulling her," said Ennis, professionally. "If it's either Wilcoxson or Sid Bean, you'll not be very late in St. Louis, no matter what time you get out of Springfield. There's a fifteen-minute clearance order for 79, you know, from one end of the run to the other; and, she carries a cargo of contract mail, and a lot of the distance from here south is down hill."

A panorama of wide curves, some of them not so wide, and descending grades down through the Macoupin bottoms, 50 miles south—with which I was familiar—swept hastily past in my mind. A train had piled up near Macoupin station, at the bottom of the hill, 10 days before. I remembered having read of it, and wondered why 79 should choose this night to be late.

"You're going to get your money's worth, boy," continued Trainmaster Ennis. "Wish I could go along."

The last remark brought reassurance. Again, we gazed northward, past the Madison street crossing. At fifteen minutes past eleven—I noted the time—a burst of light, far eclipsing the street lamps that dotted the freight yards, suddenly threw the strings of box-cars and flats into vivid outline, even at half-a-mile that dark night.

Rolling, Steaming, Squealing Into Port

"The lost is found," commented Ennis. "Let's walk down to where the engine stops, so we'll have plenty of time to meet the crew. Wish I was going along."

Locomotives have always fascinated me, but as this giant hog of a machine in action came rolling, steaming, squealing into port, I gazed at it with abiding inquisitiveness.

"Engine 659, the biggest we've got," called Ennis, above the din of arrival, as the train came to a stop. "And, the fastest," he added, though he probably knew I would reach that conclusion in the ensuing two hours. We walked alongside the tender as the fireman climbed up and aft and prepared to take on water. The engineer, we noted by his torch, was letting himself down out of the cab, on the side opposite us.

At Ennis' direction—I was yet in his hands—we walked around in front of the pilot. That locomotive

looked a mile high and a quarter-of-a-mile across. Continuing, we came upon the engineman as, with torch in hand, he was bending over in an effort to make certain that no boxes on his tender were hot, nor any cups devoid of grease or oil.

"It's Sid Bean," called the trainmaster. His sally of a few minutes before, "If it's either Wilcoxson or Sid Bean, you'll not be very late in St. Louis," flashed in my mind, though I said nothing.

We approached the big, good-natured engineer. After an introduction we shook hands, then Bean, taking the special order that Ennis proffered him authorizing my transportation in the engine cab instead of in a coach far in the rear, continued his oiling and inspecting. Presently the fireman came down from the tender and joined Ennis and me.

Coal-slinger Introduces Himself

"My name is Ed Parker," announced the coal-slinger for whom, presently, I amassed the greatest respect and sympathy.

"Now, you're all set," concluded Ennis. "Follow the fireman and he'll take care of you."

I climbed the iron ladder, gazed for a moment at the bulging boiler with its maze of bars, rods, levers and valves, noted that the place was warm enough, even in winter, and, at Parker's direction, positioned myself on a small seat directly in front of a larger cushion which the fireman occupied—or would have, had he been someone other than a busy fireman on Engine No. 659.

In a moment, Engineer Bean climbed aboard, then followed a careful reading by both men of typed orders on flimsy, silhouetted against a lone electric light, the rays from which were noticeably shaded. Almost immediately, two shrill whistles, played apparently by air, sounded from the top of the cab, and Sid Bean took his seat on the right-hand side, opposite me. Somebody touched, pressed or pulled something somewhere, and the engine bell started somersaulting. Simultaneously I felt a jar and, looking out of my meagre portion of the cab window, discovered that we were starting to move. The ride had commenced.

When it comes to adventure, I have never claimed to be other than a tenderfoot. Front line service in France had its tragic thrills. A few years ago, while up in an airplane with a strange, though trusted, ex-army pilot, I suffered—using that word advisedly—a generous shock when at three thousand feet we went suddenly into a series of loops, and later did a bit of spiralling, barrel-rolling and volplaning, for—as my pilot afterward explained—good measure. A kick, for me, is always there, when doing the unusual.

So, when the sense of motion came, I began an earnest survey, with the aid of what light there was, of my surroundings. I gazed straight ahead, sighting the track along the huge steel bulk that

even after a few hundred feet, was starting to rock slightly. The oblong window in front of me, with the slit extending vertically, permitted vision. I was struck by the transformed shape of the huge locomotive, as viewed from back in the cab. Its graceful lines, as seen from the side, and from a distance, had vanished. It looked more like a long projectile, a mass of some sort, with boards and rods running the length of it. I wondered how Engineer Sid Bean was making it, and glanced across toward his side.

The fireman stepped down from behind me, turned to a large shovel in the tender door, and as he swung around to face the boiler there was a loud hissing sound and two heavy doors on the firebox parted company, as a pair of inverted scissor blades would open. There was a blinding flash as the light and heat from that seething firebox flooded the cab, and I could see my trusted guardian, Sid Bean, holding resolutely to the end of a long lever which coursed, at an angle, toward the upper middle of the boiler. Seldom, after that, did he have his hand off this propelling bar, the throttle.

You're in for a Ride, Boy

The heat from the boiler was noticeable, even though a slight breeze was beginning to course through the cab. I was sitting with one knee between the boiler and the cab window; the other spread back, behind the boiler. I noted two heavily insulated pipes close to my cheek. I started to lay hold of one, and discovered instantly that it was too hot for contact.

"Grab that injector rod, mister," called Fireman Parker, who evidently noted my quest for better support as he returned to his seat. "I run the water with this valve down here, and you'll need something to hold onto pretty soon." I had observed the hooked rod, but had kept hands off for fear of doing something to the engine that might not be becoming of a guest. That rod was a friend indeed many times in the two hours that followed.

"We got a standing order of twenty miles an hour to Iles," called Parker in my right ear, as we got under way, "but from there on we burn 'em up."

"How late are we out of Springfield?" I asked.

"Thirty-five minutes," he replied.

"Are we apt to make some of that up?" I pursued.

Grabbing Signals

"Hell, yes," answered Parker. Then, "I've got to watch for the Iles target. Bean and me both is supposed to grab all signals."

While Parker leaned far out of the cab window behind me, I concentrated on the track ahead. Presently, the long overhead belt line of another railroad that spans the Chicago & Alton yards in that sector came into view. I studied the winking lights of green and red. Suddenly Bean, who, too, had been watching very closely, pulled his body toward the throttle and called out loudly:

"Clear board!"

"Clear board!" echoed the fireman, and I could feel engine 659 start throbbing. For a little while I noted the exhaust, and thus calculated the revolutions of the six-foot drivers underneath. After a time that bit of rhythm was swallowed up in other noises which soon graduated into a perfect roar. Even the whistle, which the engineer used freely from then on, was dwarfed by the din in that engine cab. Clearly, the time had come to settle down and mark well the speed.

Strangle-hold on Injector Handle

Ten miles, with a fast moving train, are soon put behind. I was conscious, presently, of a violent lurching and plunging of the locomotive.

"Going through Chatham," yelled the fireman. I heard him, but only because he was close behind me. I plied a strangle-hold on the injector handle. If that locomotive didn't leave the rails, it seemed, it wouldn't be because it wasn't trying nobly to do so.

"These frogs and switches through towns is hell," the fireman was yelling, but I was watching something else. Just as we cleared the little town, a white sheet spread suddenly in front of the headlight. Fog! I turned and asked Ed Parker how fast we were going.

"Around seventy," he called, as I inclined my ear. It was too bad, I reasoned—thirty-five minutes late, then fog. I waited for 659 to slacken its speed. In a moment, Bean yelled across to our side:

"Clear block!"

Parker, returning from the firebox, repeated the call. "Don't you ever slow up for a fog?" I asked him. The fireman looked surprised. There was no use trying to look ahead, so I concentrated on an effort—summoning all the lung power I had—to talk things over with Parker.

"What'd we want to slow up for?" he yelled, comfortably. "Besides, we're late." That, of course, was true; but what did that have to do with the price of battleships, on a night like this?

A Wee Bit Nervous

"Gettin' nervous?" queried my host.

"No!" cried I, lyingly and graciously.

A pair of tenderfoot eyes gazed steadfastly forward.

"We're pulling three sleepers through for the southwest," called Parker, after another hitch at the firebox. My mind still was on the fog. "They go to Texas," continued the fireman. "Lots of our mail is through stuff, too." I wondered whether the conductor knew about that fog. "It ain't often we drag down now with less than eight cars." The fog made it appear to me that we were hurtling through space at a terrific rate, yet getting nowhere. "I throw ten to twelve tons of coal in that firebox between Bloomington and St. Louis, 160 miles!" Fogs and railroading, I figured, never ought to be consolidated. "And this boiler uses 10,000 gallons of water on the same trip." A hog on wheels, I admitted to myself, and resumed my worrying. Suddenly we commenced to bound, pitch and bowl. Parker leaned far out of the window again. In a moment came the call from engineer to fireman:

"Clear board!" I would have sworn, from the reaction, had it been possible, that 659 heard the "Clear board!" call and responded to it much as a dog answers impulsively to familiar signals.

"Going through Auburn," yelled Parker. I couldn't even distinguish company buildings within the right-of-way. My admiration for the two boys who made that dash with 659, or some other 600-engine every night, regardless of weather, was increasing every minute. Before we plunged through Virden the fog lifted. So did my morale. I settled down to enjoy the rest of the trip—until we got almost to Nilwood. I, too, had seen that the block ahead was showing red instead of green, but Sid Bean, of course, caught it first. There was a terrific screaming of brakes, and in a quarter of a mile or so, we came to a full stop. I wondered what next. We waited a moment, then started moving forward though slowly.

"May be a wreck, may be another train in the block, trying to get out of our way, or it may be just nothing," explained Parker. "What we do in a case like this is to proceed cautiously until we get to the next block. If that shows green, away we go."

Which was what happened. All went well—for me—until we slowed at Rinaker Station, to pick up an order,

then started down through the curved and highly graded stretch known to Alton railroad men as "Macoupin Hill," and the bottoms. For twelve miles it is one severe turn after another. We shot out upon the long reverse twist that reaches its climax at Beaver Dam Lake station. I watched this bit of track race back under the locomotive. We pitched and lurched. The flexibility of the engine astounded me. A curve would show up in front of us. To all appearances, the locomotive was done following rails. Track and all would disappear. It would look like curtains. And, the track sat on a high fill. Crunching, grinding, groaning and roaring, the locomotive would rush staggeringly toward the abyss, then grudgingly start jerking itself about—until track was visible ahead again. And so on, with each curve.

I noted the little lake station shanty where, as a boy, I used to loaf between fishing excursions to Beaver Dam Lake, and watch trains pass. It fairly jumped at us from out the darkness, as the engine's penetrating headlight glare snatched it from the deep, murky darkness of the night. We had scarcely attained the first series of descents before fog enveloped us again. Sid Bean merely redoubled his vigilance.

The next three towns were—to me—substantial blanks. I realized, from the contact with switches and the plunging of the huge locomotive that we were in areas characterized by yards, sidings and the like, but the fog obliterated details. We rushed on. Soon after we passed through Godfrey—I knew the place because Ed Parker very courteously identified it—we slowed down perceptibly. The fireman, after tending his fire, went to the passage-way between engine and tender, let himself down and shortly crawled back up again, calling "O.K." to the engineer as he returned, carrying what looked to me like a piece of rubber hose eighteen inches to two feet in length.

"What's that thing?" I inquired, when Parker returned to the seat behind me.

"They call it a 'spann'," replied the fireman. "We usually dub it 'the stick'."

"What do you do with it?" I pursued.

"Drop it off at Wann," Parker informed me. "That is part of the signal system on this stretch, and while that spann is out of its socket, and here in our cab, a derail is thrown at Wann that keeps any train from coming up the hill and running into us. We drop it off at Wann, then the next train picks it up and carries it back. We don't have to worry about block signals while we've got this 'stick' with us." At Wann, where we met train No. 78, companion to ours, though northbound, we slowed down while the fireman leaned out and tossed the spann into a canvas sack near the track. I pondered that transaction until we got going strong again, just before entering Granite City whence the Merchants' Bridge across the Mississippi led us to the Missouri side.

Entering St. Louis

St. Louis is a city of many terminals and the home of perhaps the greatest 'puzzle-switch' interlocking system—entering Union station—in the world. The river front we had negotiated at a comparatively slow rate of progress. We traversed the elevated stretch, turned abruptly to the right a little way beyond the bridge—Eads Bridge—and rested for a moment out in front of the station. I looked back as we stopped and observed that our train was being cut almost in two.

"They take those southern sleepers off of us before we back in," explained Parker. "They go out in a little while on another train." I gazed at the apparently confusing batteries of semaphores, set high and showing a

multiplicity of lights; and wondered how in the name of Jehovah Sid Bean could tell when one of those lights blinked at him. But, he and Parker were not long in figuring it out, and after backing for a quarter-of-a-mile, we sat under the shed of Union station.

Reluctantly, I took leave of those unconcerned, yet plucky and faithful, chaps who kept 79 rushing toward its destination.

"Hope you enjoyed the ride," remarked Sid Bean cordially as I got up from in front of the fireman's seat, stretched and made ready to climb down out of the cab. I hadn't had time to chat with Sid. Besides, it is against orders to bother the engineer.

"I'm due for a thick steak," observed Ed Parker, as I was shaking hands with Bean. I didn't wonder. He had earned a whole hind-quarter. A fellow who, twice every 24 hours, when on duty, shovels coal every 20 seconds for 160 miles, and moves at least 10 tons from tender to firebox in so doing, merited a broiled steer, so far as I was concerned. Both men invited me to ride on out to the round-house and join them at their favorite restaurant, but family and friends, who had come down in a Pullman on the rear of 79, I knew would be awaiting me at the station gate, so those engine heroes and I parted company.

"Ride with us again, sometime," chorused the twain, to whom 80 miles an hour through a fog is mere routine.

"First chance I get," I called back—I, who wonders still why a locomotive, making that speed, stays anywhere near two rails.

Action—and Eternal Vigilance

Back in comfortable cushion seats, with the long, gently swaying coach riding as smoothly as a giant ocean liner on a level sea, one cannot grasp the picture up front. There it is nothing but action, action, action! And, eternal vigilance. And all because a speed-demanding public has forced the evolution of locomotive-building from the early wheelbarrow type and size to the present elephant-like proportions. Yet, speed-demons that many of these fast trains are, they are safe. A tenderfoot, up in a cab for the first time, gets the impression that a pile-up is almost inevitable. Back in the coaches, one rarely thinks of accident, while riding. He basks in a feeling of security and comfort. Even a receding track, observed from the rear end of a parlor car, is unimpressive. But, up front, the right-of-way, the towns, the switches, the bridges, the curves—they all come at you. The old difference, I presume, between attack and retreat.

We made the hundred miles that dismal, murky, depressing night, from station-stop to station-stop, in two hours and fifteen minutes, gross time consumed. And, in addition to the other hazards I mentioned, we passed through 18 towns and 9 miles of slow-going terminal, entering St. Louis.

It will take a worse crab than I, hereafter, to smirk when the parlor-car conductor on a fast train comes through to collect my extra fare.

W. M. WHITENTON, who resigned recently as vice-president in charge of operation of the Missouri-Kansas-Texas, has been elected president of the Railroad Building and Loan Association at Dallas, Tex.

THE MISSOURI PACIFIC has substituted musical notes from a dinner gong for the familiar "Last call for dinner; dining car's ahead," on its passenger trains. Under this plan the waiters pass through the coaches and Pullman cars sounding the chimes.

St. Louis-San Francisco Sells Stock

Road has had interesting history since organization and remarkable improvement in earnings and efficiency in recent years

A NNOUNCEMENT to common stockholders of the St. Louis-San Francisco of their right to subscribe at par for new common stock in the ratio of three shares of new stock for 10 of old is one of the most important developments in railway finance in several years. The Frisco is not the first railroad to sell common stock since the war, or more exactly, since the collapse of railroad credit just prior to federal con-

mortgage bonds by a precariously small margin. As concerns the Frisco itself, the opportunity to sell stock seems in some respects to be of secondary interest; the road has done so many things recently and accomplished the unexpected so frequently that the present sale of stock, however important, appears merely as the latest of several steps evidencing the rapidly increasing prosperity of this carrier.

A Headliner in Railroad History

The St. Louis-San Francisco has always been a headliner in American railroad history, especially because of the contrasting manner in which it has alternately been a subsidiary line in some other system and then the parent company in a group of its own. Its recent acquisition of a large interest in Rock Island is true to the picture because at one time Rock Island controlled the Frisco.

The original St. Louis & San Francisco Railway Company was organized in 1876 as the successor of the Atlantic & Pacific, the line of which—then extending from Pacific Junction, Mo., to Vinita, Ind. Terr.—was acquired at a foreclosure sale. The Frisco's early development was from St. Louis toward the Southwest. Not the least interesting feature of its early history was the community of interest with the Atchison, Topeka & Santa Fe. For instance, the Frisco gave the Santa Fe a half interest in the Atlantic & Pacific and joined with it in attempting to complete the A. & P. line to the Pacific coast.

In 1890, the Santa Fe acquired all of the common and preferred stock of the Frisco and issued \$27,000,000 of its own stock in exchange. At that time the Frisco operated 1,441 miles of railroad; its lines extended from St. Louis via Springfield, Mo., to Monett where they branched into three divisions including a line via Wichita, Kan., to Ellsworth; another to Paris, Tex., and the central division of the Atlantic & Pacific which then appeared as a line from Seneca, Mo., via Vinita, Ind. Terr., to Sapulpa. By 1893 the company's mileage had increased to 1,328. To this was added 536 miles representing the company's half interest with the Santa Fe in the Atlantic & Pacific which now appeared as having a central division—Seneca, Mo., to Sapulpa, Ind. Terr.—and a western division extending from Albuquerque, N. Mex., to Mojave, Cal., totaling with branch-



The St. Louis-San Francisco

trol; the occasions on which railroad common stock have been sold are, however, still so few that they are distinctly noteworthy.

In its larger aspects the Frisco's present offering of stock marks an important event in the revival of railroad credit. Nor does the event lose in importance through the circumstance that the railroad is not one of those carriers with long-standing earning power and vast reserves such as the Santa Fe, New York Central, Union Pacific or Atlantic Coast Line, but a property that has been out of receivership but a few years and which not long ago was earning interest on its income

Table I—St. Louis-San Francisco, Operating Results, Selected Items, 1916

| Year | Average Mileage Operated | Revenue Ton-Miles | Revenue Passenger- Miles | Rev. per ton-mile Cents | Total Operating Revenues | Total Operating Expenses | Net Operating Revenue | Operating Ratio | Net Railway Operating Income | Net After Interest* and Other Charges | Net Charges for Addi- tions and Betterments |
|----------|--------------------------------|----------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|-----------------------------|--------------------|---------------------------------------|--|--|
| 1916.... | 5256 | 3,697,396,000 | 595,473,000 | 0.99 | \$53,119,999 | \$35,646,779 | \$17,473,220 | 67.11 | ..... | \$1,698,443 | ..... |
| 1917.... | 5207 | 3,963,259,000 | 719,118,000 | 0.99 | 59,676,657 | 39,610,818 | 20,065,839 | 66.38 | ..... | 2,847,788 | ..... |
| 1918.... | 5165 | 4,155,543,000 | 783,014,000 | 1.13 | 72,475,313 | 57,807,310 | 14,668,004 | 79.76 | ..... | 125,587 | ..... |
| 1919.... | 5252 | 4,036,819,000 | 851,007,000 | 1.33 | 82,202,919 | 64,069,624 | 18,133,295 | 77.94 | ..... | 152,052 | ..... |
| 1920.... | 5253 | 4,631,381,000 | 857,610,000 | 1.44 | 98,723,040 | 89,886,545 | 8,836,495 | 91.03 | ..... | 1,743,231 | ..... |
| 1921.... | 5356 | 3,302,727,000 | 621,092,000 | 1.69 | 86,292,584 | 64,385,707 | 21,906,878 | 74.61 | ..... | 3,225,680 | \$5,019,293 |
| 1922.... | 5246 | 3,602,864,000 | 547,837,000 | 1.60 | 83,008,023 | 62,631,731 | 20,376,291 | 75.45 | ..... | 753,013 | 5,959,454 |
| 1923.... | 5246 | 4,439,507,000 | 590,517,000 | 1.41 | 89,633,152 | 65,934,620 | 23,698,532 | 73.56 | ..... | 3,762,859 | 16,781,208 |
| 1924.... | 5258 | 4,715,158,000 | 535,579,000 | 1.39 | 90,509,139 | 64,092,011 | 26,417,127 | 70.81 | \$20,824,430 | 5,925,574 | 3,959,221 |
| 1925.... | 5426 | 5,116,800,000 | 496,536,000 | 1.38 | 94,715,375 | 65,928,946 | 28,786,429 | 69.61 | 22,322,105 | 7,162,552 | 2,433,426 |
| 1926.... | ..... | ..... | ..... | ..... | 94,406,054 | 65,921,910 | 28,484,144 | 69.83 | 23,238,575 | 7,545,374 | 15,462,750 |

* Including interest on adjustment and income bonds.

Standard return for operations during federal control or average annual net railway operating income for three years ended June 30, 1917, was \$13,316,571.

es 1,072 miles. These interesting developments reached a temporary climax in the panic of 1893 when all three companies went into receivership.

In 1896 there emerged in reorganization a new company known as the St. Louis & San Francisco Railroad Company, an independent company operating 1,328 miles of line. The new company apparently was very enterprising. It expanded rapidly in size, first by reacquiring the Central division of the Atlantic & Pacific in a foreclosure sale of that property in December, 1897, and then by adding other lines which increased the growing system's mileage to over 2,000 by 1901.

It was in this year that the management suddenly embarked upon one of the most extravagant programs of expansion ever known in American railroad history. For instance, in the spring of 1901 the Frisco acquired by purchase of practically all of its capital stock control of the Kansas City, Fort Scott & Memphis, 855 miles, and of the Kansas City, Memphis & Birmingham, 286 miles. This gave it a line between Kansas City and the Southeast, crossing the original Frisco line at Springfield, Mo. The purchase proved to be a wise one because it brought the Frisco into new territory and the lines today form one of the most valuable parts of the system.

In May, 1901, the Frisco acquired the Fort Worth & Rio Grande extending from Fort Worth, Tex., southwest to Brownwood, 146 miles, and at about the same time it acquired the Red River, Texas & Southern, extending from Sherman, Tex., to Fort Worth, the Oklahoma City & Western, completed in 1903, from Oklahoma City, Okla., to Quanah, Tex., the St. Louis, Memphis & Southeastern, the St. Louis & Gulf, etc.

Ambition then outran discretion in the form of a purchase in August, 1902, of about 60 per cent of the preferred and 92 per cent of the common stock of the Chicago & Eastern Illinois, the preferred stock being paid for in \$150 of certificates paying 6 per cent dividends and the common in \$250 of certificates paying 10 per cent dividends in respect of each share of stock represented by the certificates.

At the beginning of 1901 the Frisco had about 2,000 miles of railroad; by May, 1903, the mileage had expanded to 5,146, or $2\frac{1}{2}$ times. Then, by a peculiar vagary of fortune the acquiring line suddenly became an acquisition when in May, 1903, announcement was made that the Rock Island had acquired a controlling interest. The Rock Island secured nearly all the Frisco's common stock and paid a price of \$120—\$60 in Rock Island stock and \$60 in bonds.

Purchase by Rock Island

The Frisco was still to go on under its new Reid-Moore-Leeds control to even greater plans of aggrandizement. Its most ambitious project in this direction was the construction of the Gulf Coast Lines from New Orleans to Brownsville, Tex. The intention was to build a connection between the Frisco and the new railroad in the form of a line along the west bank of the Mississippi between Memphis and New Orleans and to extend the new railroad across the Rio Grande into Mexico and establish a new route via Tampico to Mexico City, of which great things were promised.

The Rock Island-Frisco managements had, however, gone too far. First the C. & E. I. did not yield enough net income to pay for the costs of carrying it, which as above noted were very high. The Rock Island succeeded in getting into all kinds of financial difficulties and, needing cash, suddenly in 1909 unloaded its Frisco stock on the market at \$37.50, or less than one-third what it had paid for it, which circumstance had rather adverse effects on Frisco credit. Then, also, the costs of building the new Gulf Coast Lines mounted much faster than was compensated for by the traffic of the newly developed territory. The Frisco went into receivership in 1913 and the Rock Island in 1915. The Chicago & Eastern Illinois was reorganized as an independent company, which it still remains. The Gulf Coast Lines, reorganized in the interest of the bondholders, suddenly waxed prosperous and have since become a part of the Missouri Pacific system.

Large Proportion of Funded Debt

The Frisco was reorganized in 1916 with approximately its present mileage. The peculiar feature of the reorganization was the large proportion of debt to total capitalization compensated for by the fact that interest on about one-quarter of the funded debt was contingent and to be paid only if earned. From the standpoint of the equity of the stockholders it is immaterial whether the interest charges are fixed or contingent but there is no question that the result was to give the Frisco a much safer position from the standpoint of future threats of insolvency. However, both the fixed and contingent interest charges have been regularly paid although there were occasions when there were doubts as to whether the contingent interest charges would be met. The Frisco capitalization as of December 31, 1926, was as follows is shown in the table at the top of the opposite page, first column.

Table II—Comparison of Selected Freight Operating Statistics

| | ST. LOUIS-SAN FRANCISCO (Does not include subsidiary lines) | | | | SOUTHWESTERN REGION | | | |
|---|--|--------------|--------------------|------|---------------------|--------------|--------------------|------|
| | Year 1926 | Year 1920 | Per cent of change | | Year 1926 | Year 1920 | Per cent of change | |
| | | | Inc. | Dec. | | | Inc. | Dec. |
| Mileage operated..... | 4,881 | | | | 32,554 | | | |
| Gross ton-miles (thousands)..... | 13,812,287 | 10,860,490 | 27.1 | .... | 94,519,306 | 72,879,760 | 29.6 | .... |
| Net ton-miles (thousands)..... | 5,707,106 | 4,951,583 | 15.3 | .... | 39,144,751 | 33,429,017 | 17.1 | .... |
| Freight train-miles (thousands)..... | 9,798 | 11,018 | .... | 11.0 | 61,778 | 62,332 | .... | 0.8 |
| Freight locomotive-miles (thousands)..... | 10,201 | 11,364 | .... | 10.2 | 64,125 | 64,285 | .... | 0.2 |
| Freight car-miles (thousands)..... | 373,204 | 283,056 | 31.8 | .... | 2,535,409 | 1,881,774 | 34.8 | .... |
| Freight train-hours..... | 768,799 | 1,054,122 | .... | 27.0 | 4,835,037 | 5,918,245 | .... | 18.2 |
| Tons of coal consumed by freight locomotives..... | 1,226,163 | 1,405,056 | .... | 12.7 | 6,649,849 | 7,206,127 | .... | 7.6 |
| Car-miles per day..... | 31.8 | 21.2 | 50.0 | .... | 34.0 | 23.5 | 44.6 | .... |
| Net tons per loaded car..... | 24.4 | 26.0 | .... | 6.1 | 24.2 | 25.8 | .... | 6.2 |
| Per cent loaded to total car-miles..... | 62.6 | 67.3 | .... | 4.7 | 63.8 | 68.9 | .... | 5.1 |
| Net ton-miles per car day..... | 48.7 | 37.1 | 31.3 | .... | 525 | 417 | 25.9 | .... |
| Freight cars per train..... | 39.0 | 26.7 | 46.1 | .... | 42.0 | 31.2 | 34.6 | .... |
| Gross tons per train..... | 1410 | 986 | 43.0 | .... | 1530 | 1169 | 30.9 | .... |
| Net tons per train..... | 582 | 449 | 29.6 | .... | 634 | 536 | 18.4 | .... |
| Train speed, miles per train-hour..... | 12.7 | 10.5 | 20.0 | .... | 12.8 | 10.5 | 21.9 | .... |
| Gross ton-miles per train-hour..... | 17,966 | 10,303 | 74.4 | .... | 19,549 | 12,314 | 58.8 | .... |
| Net ton-miles per train-hour..... | 7,423 | 4,697 | 58.1 | .... | 8,096 | 5,648 | 43.3 | .... |
| Lb. coal per 1,000 gross ton-miles..... | 154 | .... | .... | .... | 124 | .... | .... | .... |
| Locomotive-miles per locomotive-day..... | 56.2 | 64.9 | .... | 13.4 | 66.6 | 67.5 | 40.2 | .... |
| Per cent freight locomotives unserviceable..... | 13.0 | 21.8 | .... | 8.8 | 15.5 | 26.1 | .... | 10.6 |
| Per cent freight cars unserviceable..... | 4.6 | 4.9 | .... | 0.3 | 6.4 | 5.4 | 1.0 | .... |

| | Amounts | Payments in 1926 |
|----------------------------------|--------------|---------------------|
| Equipment trust obligations..... | \$20,786,000 | |
| Mortgage bonds..... | 201,253,765 | \$10,950,95 |
| Collateral trust bonds..... | 3,026,000 | |
| Cumulative adjustment bonds..... | 40,532,693 | 2,432,209 |
| Income mortgage bonds..... | 35,172,000 | 2,110,320 |
| Preferred stock..... | 7,557,500 | 419,918 |
| Common stock..... | 50,447,026 | 3,431,973 |

This table shows readily the points to which reference is made, especially the high proportion of bonds to total capitalization and the fact that of the total of \$15,500,000 paid out in interest charges in 1926 no less than \$4,500,000, or 29 per cent, was the contingent interest. The large payments in dividends in 1926 will bear witness to the position in which the road now finds itself. The preferred stock, which will be noted to be very small in total amount, received 6 per cent dividends which are non-cumulative and which have been paid only since November, 1924. The common received its first dividend in January, 1925, at the annual rate of 5 per cent. The rate was increased to 7 per cent in October, 1925, and on April 1, 1927, stockholders received an extra $\frac{1}{4}$ per cent quarterly payment which will increase the annual rate to 8 per cent.

The record of the Frisco since its reorganization has been a remarkable one. The road has developed an entirely unexpected earning power and the management has shown considerable willingness in permitting the stockholders to participate in the favorable earnings. At the same time, the management has evidenced much strategical skill, as was evidenced notably in the acquisition of a large interest in the Rock Island which, if nothing more, has had the effect of requiring that the Frisco be given most careful and courteous consideration in any plans for railway consolidation in the Southwest.

The reason for the Frisco's remarkable improvement in earning power is primarily oil—meaning not so much the traffic in crude or refined petroleum as the traffic which has resulted from the general commercial or industrial development of the Southwest following upon the increased prosperity of that region. In this the Frisco has not differed greatly from its neighboring railroads in the Southwest which also have had large increases in traffic in recent years and have shown unexpected operating efficiency in the handling of that traffic. To compare the operating results of the Frisco with the other roads in the Southwest is to set up a high standard of performance, but the record shows that in several leading respects the Frisco has developed a greater percentage of improvement than is shown for the region as a whole.

Traffic

Complete traffic figures are not yet available for 1926. The record of the Frisco's revenue ton-miles in 1925 (which were slightly exceeded in 1926), however, showed an increase over the year ended June 30, 1916, of 48.1 per cent. The increase in the Southwestern region was 52 per cent and for the railroads of the

country as a whole only 22 per cent. In 1925 as compared with the calendar year 1916 the Frisco's increase in revenue ton-miles was 38.2 per cent. The change in the character of the road's traffic in this period is shown in the preceding table.

The revenue tons carried increased 22.3 per cent but the traffic in manufactured and miscellaneous products increased 82.2 per cent; whereas this group constituted 21.11 per cent of the traffic in 1916, in 1925 it constituted 31.44 per cent. A large proportion of this increase was in the item of refined petroleum and its products. This constituted 7.44 per cent of the total traffic in 1916 and about one-third of the manufactures and miscellaneous, but in 1925 it constituted 15.21 per cent of the total traffic, about one-half of the manufactured products and its volume was $2\frac{1}{2}$ times what it was in 1916. The oil traffic in 1925 was the largest in the company's history. It was a third larger, for example, than in 1924 and nearly a half larger than in 1918 or 1919.

Operating Statistics

The 1926 operating ratio was 69.83. This was the lowest reported since 1917 with the single exception of 1925. The 1926 transportation ratio was 33.07 as compared with 33.75 in 1925, thereby indicating that the increase in the operating ratio was in the maintenance accounts. It is in the comparison of the operating statistics that the really interesting picture is presented. These are shown in Table II, the figures for 1926 being compared with 1920 and given for the St. Louis-San Francisco and for the Southwest region as a whole. The comparisons show a remarkable improvement either for the road or the region but it will be observed that in the case of nearly every unit—except the volume of traffic—the Frisco has shown a greater improvement than the region, although it is true that in several instances the Frisco's 1926 figures are still below those of the region. Of particular interest is the Frisco's decrease of 11.0 per cent in freight train miles, of 27.0 per cent in freight train hours and of 16.7 per cent in fuel consumed even with the increase in gross ton-miles of 27.1 per cent. There will also be observed the increase of 43.0 per cent in gross tons per train, of 20.0 per cent in train speed and of no less than 74.4 per cent in gross ton-miles per train hour—a really phenomenal record.

\$14.17 a Share in 1926

These explain—very briefly and generally, it is true—the Frisco's earnings after interest and other charges in 1926 of \$7,545,374, equivalent after allowance for the preferred dividends to \$14.17 a share on the common stock and give the background for the general improvement—shown in more detail in Table I—in the road's fortunes which has taken place since its reorganization.

The Frisco now owns 183,333 shares of the common stock of the Rock Island upon which, now that the Rock Island is paying 5 per cent dividends on this issue, the Frisco will receive an annual income of \$916,665. The Frisco's ownership represents $24\frac{1}{2}$ per cent of the Rock Island common outstanding which does not give it control but which does give the Frisco management considerable say regarding Rock Island policies. No statement has yet been made, however, of the future plans of the Frisco relative to its interest in its neighbor property. The general supposition is that the community of interest between the two properties will derive its greatest element of value in the improved strategic position of both in future negotiations relative to consolidations.

The Frisco's plans with reference to the Musc

| Products of | 1925 | | 1916 | | Per cent of Increase |
|------------------------|---------------|-------------------|---------------|-------------------|----------------------|
| | Total Tons | Per cent of Total | Total Tons | Per cent of Total | |
| Agriculture..... | 3,309,284 | 12.72 | 3,317,120 | 15.60 | -0.2 |
| Animals..... | 635,798 | 2.45 | 701,546 | 3.30 | -10.8 |
| Mines..... | 10,022,368 | 38.54 | 8,660,087 | 40.71 | 15.5 |
| Forests..... | 3,093,368 | 11.89 | 3,067,467 | 14.42 | 1.1 |
| Mfrea. & Misc..... | 8,176,380 | 31.44 | 4,489,579 | 21.11 | 82.2 |
| L. e. l. | 769,993 | 2.96 | 1,034,225 | 4.86 | -25.6 |
| Total..... | 26,007,191 | 100.00 | 21,270,024 | 100.00 | 22.3 |
| Coal..... | 5,596,310 | 21.52 | 5,671,346 | 26.66 | -1.3 |
| Crude petroleum..... | 211,804 | .82 | ..... | ..... | ..... |
| Refined petroleum..... | 3,956,361 | 15.21 | 1,583,486 | 7.44 | 255.0 |
| Revenue Ton-miles..... | 5,116,800,000 | ..... | 3,697,396,000 | ..... | 38.2 |

Shoals, Birmingham & Pensacola are much clearer. This property which extends from Kimbrough to Pensacola, 145 miles, was acquired principally to give the Frisco an outlet to tide-water which it previously did not have. The Frisco will construct new mileage from Aberdeen, Miss., to Kimbrough, 150 miles, to connect with its new line. The present sale of stock is for the purpose principally of supplying funds for this extension. The Muscle Shoals, Birmingham & Pensacola is controlled by ownership of its capital stock which was acquired in December, 1925. The road is operated separately.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended March 19 aggregated 1,006,861 cars, an increase of 29,843 cars as compared with the corresponding week of last year and of 95,380 cars as compared with 1925. A large part of the increase was in coal loading,

Revenue Freight Car Loading

Week Ended Saturday, March 19, 1927

| Districts | 1927 | 1926 | 1925 |
|-----------------------------|------------|------------|------------|
| Eastern | 241,221 | 237,306 | 216,262 |
| Allegheny | 210,355 | 197,924 | 188,447 |
| Pocahontas | 59,051 | 51,479 | 39,837 |
| Southern | 165,964 | 163,667 | 154,306 |
| Northwestern | 115,062 | 119,563 | 115,421 |
| Central Western | 139,285 | 133,907 | 133,670 |
| Southwestern | 75,923 | 73,172 | 63,538 |
| Total Western Districts | 330,270 | 326,642 | 312,629 |
| Total All Roads | 1,006,861 | 977,018 | 911,481 |
| Commodities | | | |
| Grain and Grain Products | 38,384 | 40,482 | 34,282 |
| Live Stock | 27,009 | 29,446 | 27,988 |
| Coal | 206,452 | 183,205 | 140,746 |
| Coke | 12,189 | 14,319 | 12,034 |
| Forest Products | 71,771 | 79,840 | 79,101 |
| Ore | 10,720 | 10,941 | 12,129 |
| Mdse. L. C. L. | 269,465 | 265,638 | 259,096 |
| Miscellaneous | 370,871 | 353,747 | 346,105 |
| March 19 | 1,006,861 | 977,018 | 911,481 |
| March 12 | 1,005,715 | 967,425 | 926,119 |
| March 5 | 994,931 | 965,009 | 932,044 |
| February 26 | 923,849 | 912,935 | 864,096 |
| February 19 | 960,873 | 932,281 | 925,886 |
| Cumulative total, 12 weeks. | 11,356,187 | 11,015,040 | 10,849,640 |

which amounted to 206,452 cars, which was 23,247 cars more than were loaded in the corresponding week of last year, although less than in the two preceding weeks. Increases were also shown in the loading of miscellaneous freight and merchandise, while there were decreases in grain, livestock, coke, forest products and ore. The Northwestern district showed a decrease as compared with the corresponding week of both preceding years, but all other districts showed increases. The summary, as compiled by the Car Service Division of the American Railway Association is shown in the table in the first column.

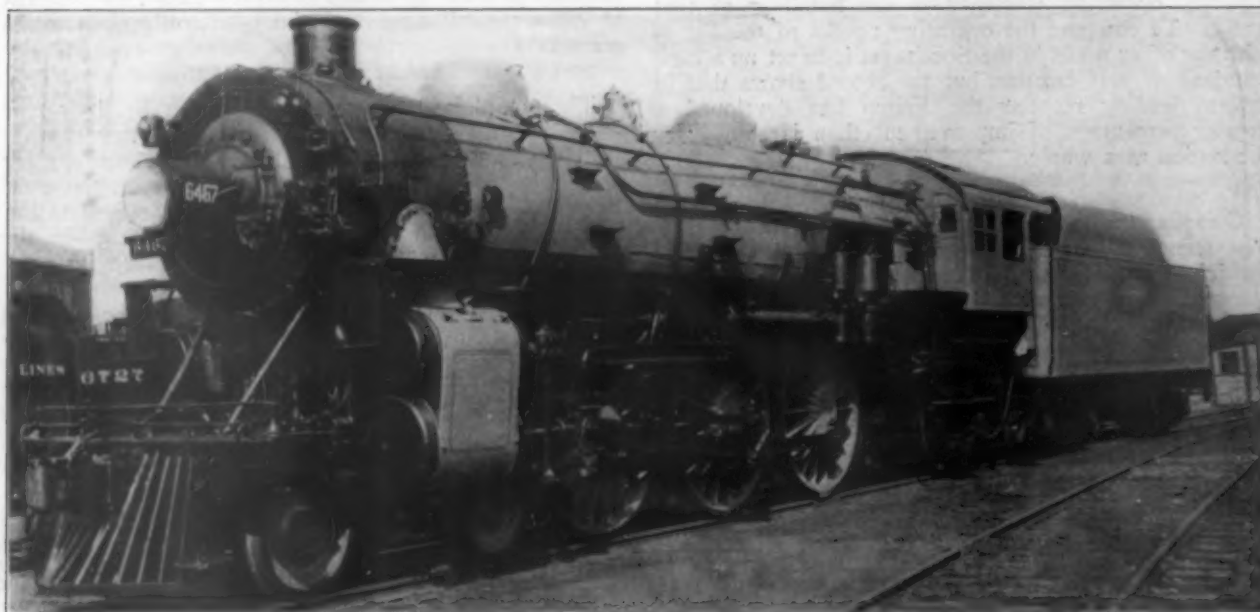
The freight car surplus for the second week of March averaged 257,186 cars, including 77,912 coal cars and 129,945 box cars.

Car Loading in Canada

A decrease of 2,448 cars in the Western division and 483 in the Eastern division was accounted for by the severe snow storms in Canada in the week ended March 19. The total of revenue car loadings at stations in Canada that week was 62,153 cars. Compared with the same week last year there was an increase of 5,168 cars.

| Commodities | Total for Canada | | | Cumulative totals to date | |
|--------------------------------------|------------------|---------------|---------------|---------------------------|---------|
| | Mar. 19, 1927 | Mar. 12, 1927 | Mar. 20, 1926 | 1927 | 1926 |
| Grain and grain products | 7,469 | 9,231 | 5,694 | 92,858 | 78,996 |
| Live stock | 2,059 | 2,055 | 2,263 | 22,514 | 22,437 |
| Coal | 6,244 | 6,362 | 3,261 | 72,673 | 53,785 |
| Coke | 279 | 326 | 406 | 4,242 | 5,601 |
| Lumber | 3,419 | 3,440 | 3,935 | 33,292 | 34,811 |
| Pulpwood | 5,551 | 6,555 | 4,050 | 63,110 | 43,485 |
| Pulp and paper | 2,300 | 2,494 | 2,552 | 24,523 | 29,444 |
| Other forest products | 3,345 | 3,538 | 3,713 | 37,718 | 39,688 |
| Ore | 1,383 | 1,427 | 1,416 | 15,214 | 15,792 |
| Merchandise, L. C. L. | 17,328 | 16,901 | 16,482 | 174,936 | 161,684 |
| Miscellaneous | 12,776 | 12,755 | 13,213 | 124,701 | 120,147 |
| Total cars loaded | 62,153 | 65,084 | 56,985 | 665,781 | 605,870 |
| Total cars received from connections | 43,078 | 44,304 | 41,707 | 424,847 | 402,397 |

THE NEW YORK, ONTARIO & WESTERN having enlarged its tunnels at Northfield, N. Y., and Bloomingburgh, announces that throughout its lines; west of Cornwall, N. Y., box cars are now accepted with no restriction on size.



The Big Four's "Battleship Gray" Pacific

Boiler jacket, wheel centers, cylinder jackets, cab, dome, sandbox and tender tank are "battleship gray," Duco finish. Smoke box, stack, pilot, wheel tires, running-board edges, cylinder head covers, tender frame and tender running gear are black. Lettering and decorative striping in aluminum, set off with black lines.

New Pullman Single Room Overnight Cars

A NEW sleeping car designed for overnight runs and containing only single bedrooms, has been built by the Pullman Company and patents applied for on the new construction. Cars of this type will make their appearance in service about April 1 on the Pennsylvania and Baltimore & Ohio between Washington and New York, and on the Michigan Central between Chicago and Detroit.

When a passenger boards the new car and goes into a room, he will find a regular bed, instead of a berth, already made and awaiting occupancy. The beds are similar to those placed in private cars and have deep springs and spring mattresses. They are of a luxurious type and represent a combination of ideas of the best manufacturers. Each bed is 32 in. wide and about 6½ ft. long. Silk coverlets add a touch of distinction.

Each room contains full toilet facilities, compactly arranged, the washstand and hopper having the appearance of an upholstered chair. When the back is folded down the washstand can be used, with hot and cold water as usual, and there is also a dental faucet. A thermos bottle and glass are in a holder at one side. There is a mirror and glass shelf above the washstand, and a long mirror in the inside of each entrance door.

A small folding table, attached to the wall opposite the bed, can be used for writing, to hold toilet articles, or for breakfast service. The floor is covered with marbled rubber tiling in black and cream squares, with a rug at the bedside. At the head of the bed is a shoebox with



The Shoe Servitor Permits Removal and Replacing Shoes Without Disturbing the Passenger, and the Ventidor in the Lower Panel of Room Door Gives Additional Air, if Needed



Looking Toward the Foot of the Bed, Showing the Folding Washstand and Table

a door in the corridor wall so the porter can remove and replace shoes without disturbing the passenger. Ample baggage space is provided under the bed and in racks.

The heating and ventilating systems are such that extremes of personal preference can be obtained by passengers. Two pipes running the length of the car under the windows in the corridor provide the general heat, sufficient to eliminate the chill from the car; while a radiator under the foot of each bed can be turned on if the traveler desires added warmth. In addition to the usual Pullman ventilation devices in the roof of the car, and the window sash slide, a current of air can be obtained by means of the vent-a-dor device in the lower part of the entrance door. Each room also has a 9-in. electric fan. Double window shades are provided; the usual silk shade rolling from the top, and a light waterproof curtain rolling from the bottom to cover an open screened window and prevent cinders falling on the bed.

Illumination is furnished by three bracket lamps of candle design with parchment shades, one being a reading lamp at the head of the bed. A 5-watt blue night lamp is provided over the bed, its soft blue light furnishing ample illumination for ascertaining the time or any other purpose.

Each car contains 14 bedrooms with communicating doors for the convenience of those traveling together. The rooms are decorated in soft colors, being alternately in greenish-grey wall tone with olive green paneling and delicate decorative striping and the frieze in vari-colored decoration, and buff and brown wall color with similar decoration.

Rooms are designated by letter, from A on, and each

entrance door has a knocker instead of the conventional buzzer. The passage-way floors are heavily carpeted with Wilton.

These cars are designed purely for short night runs, where passengers entrain between 10 P.M. and midnight and arrive at their destination early the next morning. Consequently they are not adapted to daylight travel and there are no chairs or seats in the rooms.

The cost of this privacy and additional luxury will be a moderate excess over the Pullman rate for a section. In the eastern territory (where these cars will be operated) one person occupying a regular Pullman compartment must pay two railroad fares for its use. In the single room car he will pay $1\frac{1}{4}$ fares and the Pullman charge for the room will be the rate for two lower berths, which is lower than the compartment rate.

The following tables show the saving to the lone traveler who wants a Pullman room and takes the new car, the surcharge being included in the Pullman rates:

New York and Washington

| Compartment | | Single Room | |
|---------------------|---------|-------------------------------------|---------|
| Two rail fares..... | \$16.28 | One and one quarter rail fares..... | \$10.18 |
| Pullman | 10.50 | Pullman | 7.50 |
| Total | \$26.78 | Total | \$17.68 |

Chicago and Detroit

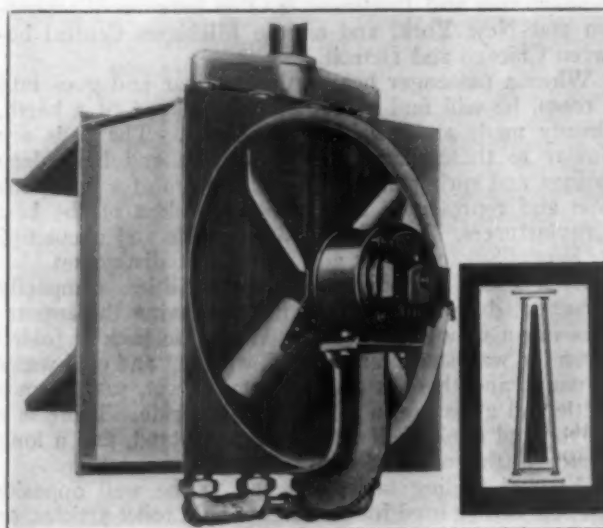
| Compartment | | Single Room | |
|---------------------|---------|-------------------------------------|---------|
| Two rail fares..... | \$19.62 | One and one quarter rail fares..... | \$12.27 |
| Pullman | 10.50 | Pullman | 7.50 |
| Total | \$30.12 | Total | \$19.77 |

A Unit Steam Heater

SHOP buildings and roundhouses have been heated for a number of years by hot air delivered through overhead or underground ducts from a central plant where the air is forced through banks of steam radiators. But this plant has been varied in some newer installations by the use of unit heaters consisting of relatively small radiators equipped with electric fans and distributed at suitable intervals around the outside walls where air drawn through the radiators is heated and delivered into the room. A number of advantages have been claimed for this type of heating, among which is greater flexibility of control and the elimination of the elaborate system of hot air ducts required with the central heating system.

A new type of unit heater has been introduced, which is known as the Herman Nelson heater. The primary feature of this is a radiator of the extended surface type such as is used in automobiles, but of a unique design

which insures an adequate thickness of metal in the steam space to withstand normal working steam pressures up to 125 lb. per sq. in., which providing thin fins of metal for the extended radiating surface. The attachment of the fins to the steamway is accomplished in an ingenious manner which avoids the difficulty of a one-piece casting or the welding or soldering of the fin vanes to the heavy metal of the steamway. The steamway consists of a one-piece special alloy cast core having a wedge-shaped cross section and fitted with pipe connections at each end. Over this thin aluminum sheets with wedge-shaped openings in the center are slipped into place and keyed to a



The Model 20 Unit Heater—A Cross Section Showing How the Aluminum Sheets Are Keyed to the Wedge-Shaped Steamway

tight fit at a uniform spacing. The edges of the slot in these fins or sheets are curled so that when they are keyed in place a spring action is developed which holds them in secure contact against the cast core.

The illustration shows the Model 20 unit complete with motor and deflector. At 1,150 r.p.m. each unit will deliver in excess of 2,000 cu. ft. of air per min. At 850 r.p.m. it will deliver in excess of 1,200 cu. ft. of air per min. The temperature of the delivered air with varying temperatures of the air supply may be controlled by variations in the steam pressure up to 125 lb. per sq. in. The unit may be installed to re-circulate the air in the room or to take outside air entirely or for the optional use of either inside or outside air.



The Baltimore & Ohio's Olive Green "President Washington"

First of a series of 20 named after Presidents. Color is olive green on boiler jacket, tender tank, cab, sand box, steam dome, bell stand, cylinder jacket, pilot, wheels and other outside parts requiring a smooth finish. Striping in red and gold on following parts: Side of front bumper steps, cylinder jacket, sand box, steam dome, bumper pilot, engine wheels, cab panels, sides, front and back of tender tank.

I. C. C. Finds Western Livestock Rates Not Excessive

WASHINGTON, D. C.

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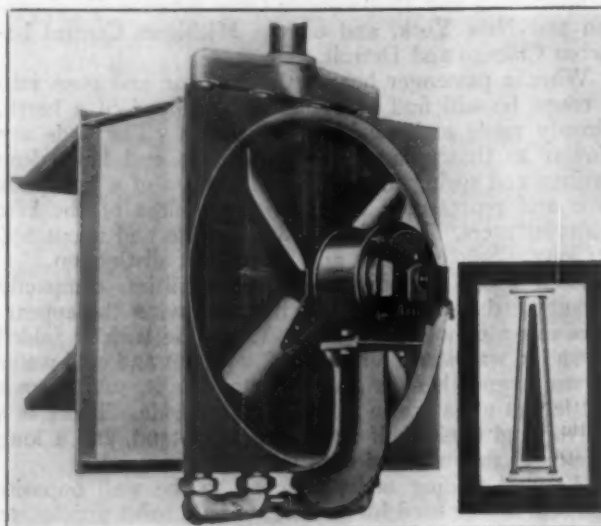
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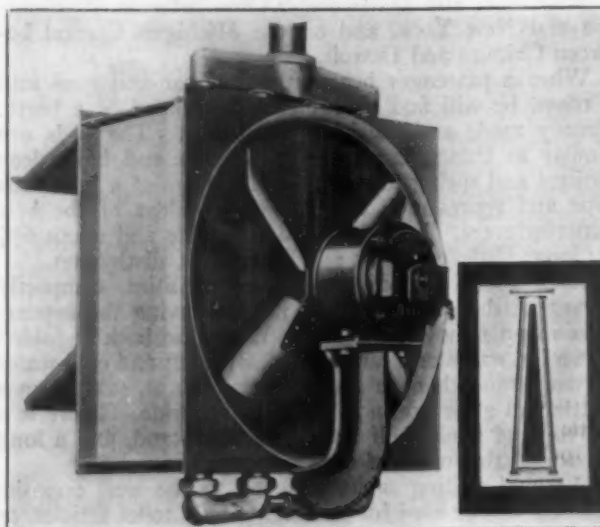
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but we found that the record would not support a finding that the rates then in effect were unreasonable, and the complaint was dismissed. 69 I. C. C. 407.

The Condition of the Industry

Although counsel for complainants contend that Congress by the resolution referred to has declared the existence of a depression in agriculture, and that therefore that fact is not open to dispute (a contention with which we do not agree, see *Revenues in Western District*, supra, page 12), much of complainants' evidence in the present case relates to the condition of the cattle industry. In this respect the evidence is quite similar to that in the original case. Witnesses from various parts of the West, but particularly from the Central West and Southwest, testified generally that there had been little, if any, change in the economic situation since 1921. It was asserted by some that conditions at the time of the hearing were even less favorable. Many cattle raisers disposed of their holdings and went out of the business because of lack of profit. In many specific instances cattle raisers' expense computations indicate that their operations in 1923 and 1924 were conducted at a loss. In a number of instances shown of record cattle raisers were compelled, because of shortage of revenue to meet operating outgo, to borrow money from year to year and to defer and compound the interest thereon. The growing burden of debt is to them an added handicap. Many staying in the business are said to be doing so because it is their life work, they have no other calling, and their funds are tied up in land and equipment which can not readily be sold. Purporting to show the depressed condition of the livestock industry, complainants also refer to the greater amount of mortgages on agricultural property than in 1912; to ranches being conducted by paying operating expenses out of capital; and to the bad condition of loan companies and banks. Complainants concede that the freight rates are not alone responsible for the depressed condition of the livestock industry, but are only one factor. The secretary of the principal complainant association stated that the cattle industry was probably in worse shape than at any time in its history, referring to the low prices, freakish weather conditions, and high overhead expenses, freight rates, taxes, grazing fees, and cost of supplies.

Defendants deny the statements of complainants' witnesses regarding the depression in the cattle industry and undertake to prove, principally by the studies and conclusions of statistical experts, that the livestock and general-farming industries have been largely rehabilitated and are on the road to early recovery.

While the condition of the livestock industry has materially improved since the period of extreme depression the recovery has by no means been complete. The industry is still suffering from depression, although not in all branches and not in the same degree as heretofore, and we are required by the resolution to afford to livestock affected by that depression the lowest possible lawful rates compatible with the maintenance of adequate transportation service. Complainants contend that the June 24, 1918, level of livestock rates, the establishment of which they seek, is sufficiently high to afford the carriers a fair margin of profit.

Defendants point out that what complainants seek is a restoration of the rates in effect long before the war, and that meantime the prices of labor and commodities, and living costs in general, have doubled or trebled. In the 20-year 1896-1916, livestock prices at Chicago approximately doubled. They further rose to record heights in the period 1917-1919, but in 1921 they sharply declined to somewhat less than the 1916 level. Since 1921 there has been some recovery. Since 1906 the only increases in livestock rates have been the 25 per cent increase, with a 7-cent maximum, made by the Director General of Railroads in 1918, and the varying increases in 1920 authorized by us, averaging approximately 32 per cent of the rates as increased by the director general. These latter increases marked the peak and were followed by the general reductions of 20 or 10 per cent thereof in 1921 and 1922. The present livestock rates in the West represent, perhaps, a net average increase of about 40 or 45 per cent above 30 years ago.

Defendants' evidence as to the peculiarities of the traffic, the special facilities necessary, and the special service performed is similar to that offered in other livestock cases. The nature of the traffic is such that it must be handled with utmost care. Stock is easily injured. Damage claims are often filed when, by reason of delay in transit, stock shrinks unduly or reaches the market too late for advantageous sale. They exceed 2 per cent of the livestock revenue. The carriers contend that the maintenance of schedule is more important than the freight rate because a market fluctuation of 0.5 cents per pound in price is equivalent to a freight-rate difference of 50 cents per 100 pounds.

Complainants contend that the logical basis for ascertaining

the lowest possible lawful rates is the cost of the service and that the pre-war rates on livestock would yield a very substantial profit above the average unit costs of handling. Apparently complainants assume that in any such computation of profit only expenses directly attributable to the traffic need be considered and that livestock need not contribute to such maintenance-of-way expenses as are occasioned by depreciation, decay, floods, or storms, or assist in defraying general expenses, taxes, or transportation expenses not incurred in a particular service.

The Hoch-Smith resolution, however, enjoined upon us to fix the lowest possible rates that might lawfully be required, compatible with the maintenance of adequate transportation service. It set no new standard of lawfulness, but said, in effect, that to the extent that there are flexible limits to our discretion we should fix the lowest rates falling within those limits. If the past we have had occasion to consider at times what may be called "out-of-pocket" cost, but while it has been contended that the carriers might voluntarily, in certain situations, establish rates covering only such cost, it has never been seriously contended that we could lawfully require this to be done. Rates that we may lawfully require must in principle be high enough to cover all the cost that may fairly be allocated to the service plus at least some margin of profit. We say "in principle" because only rarely is definite information available as to such cost, and in practice rates must often be fixed largely by comparison with other rates. Of course, the other sections of the interstate commerce act must also be borne in mind in determining the lowest lawful rates in a particular situation.

Cost of Handling Livestock

The carriers endeavor to show that the livestock revenues as a whole approximately cover operating expenses without any contribution to taxes or a return on investment.

The present record does not contain a detailed apportionment of operating expenses by primary accounts to livestock. We do not find the method by which the carriers seek to demonstrate the confiscatory nature of livestock rates altogether convincing. It is certainly not clear to us that it is our duty "in disposing of this case to authorize and direct the carriers defendant to advance their general level of livestock rates by at least 20 per cent," as contended by carrier counsel. The carriers admit that they would not use the car mile basis for comparing earnings from all traffic with those from coal or grain. They seek to justify its use in comparing livestock and other freight because of the special expenses connected with livestock traffic, but these as a whole are nowhere reduced to a car-mile basis. The carriers were evidently led to be satisfied with this rather rough cost computation, because they considered the record as having conclusively established that it costs at least 20 per cent more to carry livestock than to carry the average carload freight, and that they were on safe ground in assuming that the car-mile cost of livestock is merely as great as that of all carload freight.

It appears from the carriers' exhibits that the revenue per gross-ton mile is greater for livestock than for all carload freight. Using car-mile earnings of 29 cents for all carload traffic and 21.6 cents for livestock, and gross car weights of 61 and 43 tons, respectively, loaded and empty movements combined, the earnings per gross-ton mile would be 5.02 mills for livestock and 4.75 mills for all carload freight. Obviously this basis of comparison allows nothing for the greater expedition and special expenses occasioned by livestock, other than those resulting from the lighter load and greater empty mileage, and is probably too favorable a basis for livestock. Special studies made by defendant carriers of selected train movements indicate a greater cost per gross-ton mile for train fuel and wages for livestock trains than for the dead-freight trains, but we do not know whether these are reasonably representative of all such traffic in the western district, and, furthermore, these expenses are but a small part of the total operating expenses.

Defendants urge that they are in no financial condition to stand any drains on their revenue resources. The carriers in the West introduced evidence purporting to show a need for additional revenue and failure to restore their earning power. That was dealt with by us in *Revenues in Western District*, supra, on a more comprehensive and recent record with which the record in No. 15686 has been consolidated, and it need not be further discussed here.

According to defendants' estimate the reductions sought, averaging about 33½ per cent, would mean a loss to them of something like \$25,000,000 per annum. This loss would fall with particular weight on the carriers in the Central West; that is, those serving that portion of the country embraced within the States of Illinois, Wisconsin, Iowa, Missouri, Nebraska and Kansas, eastern Colorado, and adjacent territory. These carriers include the Chicago & North Western, the Chicago, St.

Paul, Minneapolis & Omaha, the Chicago Great Western, the Chicago, Milwaukee & St. Paul, the Chicago, Rock Island & Pacific, the Chicago & Alton, the Chicago, Burlington & Quincy, the Minneapolis & St. Louis, and the Union Pacific. Counsel for the central western carriers filed a supplementary brief to show the disastrous financial effect upon their revenues if the reductions sought by complainants became effective. The importance of the livestock revenue to these carriers appears from the fact that for 10 of them, operating 53,487 miles of line, the livestock revenue in 1923 was \$50,153,797, which was 7.73 per cent of their total carload revenue. In the case of the Chicago & North Western the reductions sought would have taken 21.2 per cent of the net railway operating income in 1923 and would have wiped out all dividends on the common stock, which were reduced to 4 per cent in 1922.

Although the evidence relating to cost and revenues does not lead to a definite conclusion as to the precise profit derived from livestock traffic at present rates, it is sufficient to demonstrate that we are not warranted, on the one hand, in reducing the livestock rates by any substantial amount; or, on the other hand, in regarding them as confiscatory.

Scale Prescribed for Southwest

Upon the present record we find that the short-haul rates complained of in No. 15686 and No. 16113 are not in excess of reasonable maxima, and in No. 16113 we find that they were not in excess of reasonable maxima. Reparation is denied. However, for the purpose of removing existing discrepancies and in the light of the Hoch-Smith resolution we prescribe the following scale of rates for the future for interstate application from and to such points in Oklahoma, Louisiana, Texas, Arkansas, Kansas, and Missouri as now carry rates based upon the Shreveport scale, on cattle, in carloads, or on calves, hogs, sheep, or goats in double-deck carloads:

| Distance | Single line, cents | Joint line, cents | Distance | Single line, cents | Joint line, cents |
|-------------------------|--------------------|-------------------|------------------------|--------------------|-------------------|
| 10 miles and less | 8.5 | 12.0 | 220 miles and over 200 | 27.5 | 31.0 |
| 20 miles and over 10.. | 9.5 | 13.0 | 240 miles and over 220 | 29.0 | 32.5 |
| 30 miles and over 20.. | 10.5 | 14.0 | 260 miles and over 240 | 30.5 | 34.0 |
| 40 miles and over 30.. | 11.5 | 15.0 | 280 miles and over 260 | 32.0 | 35.0 |
| 50 miles and over 40.. | 12.5 | 16.0 | 300 miles and over 280 | 33.5 | 36.0 |
| 60 miles and over 50.. | 13.5 | 17.0 | 320 miles and over 300 | 34.5 | 37.0 |
| 70 miles and over 60.. | 14.5 | 18.0 | 340 miles and over 320 | 36.0 | 38.0 |
| 80 miles and over 70.. | 15.5 | 19.0 | 360 miles and over 340 | 37.5 | 39.0 |
| 90 miles and over 80.. | 16.5 | 20.0 | 380 miles and over 360 | 38.5 | 40.0 |
| 100 miles and over 90.. | 17.5 | 21.0 | 400 miles and over 380 | 39.5 | 41.0 |
| 110 miles and over 100 | 18.0 | 21.5 | 420 miles and over 400 | 41.0 | 42.0 |
| 120 miles and over 110 | 19.0 | 22.5 | 440 miles and over 420 | 42.0 | 43.0 |
| 130 miles and over 120 | 20.0 | 23.5 | 460 miles and over 440 | 43.0 | 44.0 |
| 140 miles and over 130 | 21.0 | 24.5 | 480 miles and over 460 | 44.0 | 44.5 |
| 150 miles and over 140 | 21.5 | 25.0 | 500 miles and over 480 | 45.0 | 45.0 |
| 160 miles and over 150 | 22.5 | 26.0 | 520 miles and over 500 | 46.0 | 46.0 |
| 170 miles and over 160 | 23.5 | 27.0 | 540 miles and over 520 | 47.0 | 47.0 |
| 180 miles and over 170 | 24.0 | 27.5 | 560 miles and over 540 | 48.0 | 48.0 |
| 190 miles and over 180 | 25.0 | 28.5 | 580 miles and over 560 | 48.5 | 48.5 |
| 200 miles and over 190 | 26.0 | 29.5 | 600 miles and over 580 | 49.5 | 49.5 |

On hogs or calves in single-deck carloads, 115 per cent of the rates herein prescribed on cattle; and on sheep or goats in single-deck carloads, 125 per cent of the rates herein prescribed on cattle. The rates thus prescribed shall be subject to the present minimum weights. The scale prescribed is in substitution of the present scale; therefore in checking in specific point-to-point rates the carriers should apply the same bases for computing distances as were applied in checking in the present rates under the scale of rates at present applicable. In computing and applying the rates prescribed herein fractions of less than 0.25 cent shall be omitted, fractions of 0.25 cent or greater, but less than 0.75 cent, shall be stated as 0.5 cent, and fractions of 0.75 cent or greater shall be increased to the next whole cent. Defendants will be authorized to establish and maintain over all interstate routes from and to the points to which the prescribed scale shall apply the lowest rates prescribed herein over any route from and to those points, and to maintain higher rates from, to, or between intermediate points, provided that the rates from, to, or between those intermediate points shall not exceed the scale of rates prescribed herein, and shall in no case exceed the lowest combination; and provided further, that the relief herein authorized shall not apply to lines or routes that are more than 70 per cent circuitous.

In No. 16131 it is alleged that certain rates on stock cattle from Oklahoma and Texas points to Missouri River markets as far north as Sioux City, and to interior points in Missouri, Iowa, and Nebraska, were and are unreasonable to the extent that they exceeded and exceed 75 per cent of the contemporaneous rates applicable on beef cattle from and to the same points, observing as a maximum the rates on stock cattle and stock calves under the Shreveport scale. The fixation of this maximum is sought because no joint rates apply to Nebraska and Iowa points, the combination of locals applying. Reparation is sought. The Kansas City Live Stock Exchange, the Standard Calf Company, Edgar Kerr, and Phil Weaver intervened in support of the complaint and seek reparation.

We find on this record that the rates complained of, except those that exceed the aggregate of the intermediate rates, were not and are not in excess of reasonable maxima. The record would not support an award of reparation if we should find that the through rates from Oklahoma City to Kansas City on stock or feeder cattle were unreasonable to the extent that they exceeded the aggregate of the intermediate rates. In their exceptions to the proposed report counsel for complainants in No. 16131 state that fat and other cattle are usually shipped in mixed carloads and that no policing had been done at Kansas City. The record does not indicate that past shipments can now be policed appropriately to determine which, if any, would be entitled to an award of reparation. Under the circumstances we make no finding as to these rates in the past.

It is stated by representatives of one of the western state commissions that the variations in the level of the livestock rates throughout western territory are probably as great as or greater than those on any other commodity, and there is but little evidence in the record regarding this situation. Some rates are per 100 pounds; others are on a basis per car; some of the rates per car are based upon different average loads than are on a distance-scale basis, others are specific rates; in some instances the rates of progression of scales are highly improper; some are applicable on both single-line and joint-line traffic, others are not; different percentage relationships apply on single-deck and double-deck carloads; and in some instances 75 per cent of the fat-cattle rates apply on stock and feeder cattle, in others 80 per cent, and in still others 100 per cent. In order to develop a record which will afford sufficient basis for correcting those improprieties, in accordance with the directions of the Hoch-Smith resolution, further investigation will be made as expeditiously as practicable under No. 17000 in relation to the rates on livestock in the western district, and the record in No. 17000 and Ex parte 87 made prior to the decision in Revenues in Western District, supra, as well as the records in Nos. 15686, 16113, 16131, and 15565, will be kept open and available for consideration in connection with that investigation.

Separate Opinions

ESCH, *Chairman*, concurring in part:

I concur in the revision of the southwestern scale, which will tend toward restoration of the former relationships between the short and long hauls, but I think it is clear that other rates are in need of similar revision, which should not have to await the result of another investigation. I am also of the opinion that the rates on stock cattle should be revised to the basis of 75 or 80 per cent of the fat-cattle rates, wherever they are not now on that basis, which has been prescribed by us in several cases. The carriers have been told before that we "strongly recommend" a revision of these rates, but it is not probable that they will take any action in line with our previous decisions without definite findings. It is my view that further relief should be accorded the livestock industry, if possible, in accordance with the requirements of the Hoch-Smith resolution.

I am authorized to state that COMMISSIONERS CAMPBELL and McMANAMY join in this expression.

HALL, *Commissioner*, concurring in part:

We do not find that the maintenance of existing rates for the first 600 miles of the Shreveport scale violates or will violate any provision of the law. Nevertheless "for the purpose of removing existing discrepancies," which are not found to result in undue prejudice or preference, "and in the light of the Hoch-Smith resolution," we require the carriers to do what no law requires them to do and that is to reduce these lawful rates so as not to exceed prescribed maxima, which we do not find to be maximum reasonable rates. In so doing we reduce by an average of about 7 per cent the part most used of a matured scale, the outgrowth of long study and experience, applicable over the larger portion of the Southwest, and we leave untouched the many inconsistencies in rates, not so carefully related, with which this record teems. Even in this scale the main defect which has been pointed out, a progression of only 8.5 cents, here made 10 cents, for the 400-mile stretch from 500 to 900 miles, as compared with 25.5 cents, here made 27.5 cents, for the preceding 400 and 15.5 cents for the succeeding 400, i. e., from 900 to 1,300 miles, is not cured in any substantial way by the substitute which we subscribe for the first 600 miles. As I read the Hoch-Smith resolution our first aid should be given to the rates which need it most, not least, in their relation to each other, and I doubt whether that resolution should be construed as empowering us to require changes by carriers in rates which they lawfully maintain. That seems to be what is done here and from that I dissent. In other respects I concur in the report.

I am authorized to state that COMMISSIONER WOODLOCK joins in this expression.

LEWIS, *Commissioner*, concurring:

I concur in the decision of the majority except that I favor a reduction in the rates for the movement of stocker cattle.

Communications and Books

N. H. Transportation Budget

NEW HAVEN, Conn.

TO THE EDITOR:

Your issue of March 5 contains on page 648 an interesting article on the Illinois Central's Transportation Budget. The statement is made that "although it has been found possible on some railroads, notably the New York, New Haven & Hartford, to prepare an annual transportation budget, the Illinois Central has found it more expedient and better suited to its operating conditions to prepare monthly budgets."

Before discussing this statement, the New Haven acknowledges its debt to the Illinois Central and several other roads in that it was after a trip of a New Haven committee to these roads that the New Haven decided to institute division accounting and a transportation budget. J. E. Slater, in the *Railway Age* of November 1, 1924, had an article on the New Haven's transportation budget, and those who are interested in this important subject are referred to his article. However, the following general statement may be in order.

We do not believe that any railroad will find a monthly budget more expedient or better suited to its conditions than the annual basis. This does not mean that the New Haven can forecast accurately a year in advance its volume of traffic. No road can do this regularly, and it would be especially difficult in New England with its large volume of manufactured products, which products are especially susceptible to changes in the general business situation. But a transportation budget does not require an accurate business forecast as will appear from the following description of the New Haven plan:

In October or November, the accounting department sets up the revenue figures for the coming year divided between freight, passenger and other, for budget purposes. These figures are always somewhat lower than those actually anticipated. The maintenance of way and mechanical departments, without any knowledge of the revenue figures, make up their budgets entirely on the basis of the expenditures necessary to maintain the road and equipment properly with especial attention to safety and the avoidance of irreparable depreciation. These budgets are separated by primary accounts, and further by divisions and shops, and where possible the output is specified in locomotives and cars to be repaired, rails and ties to be installed, and similarly. The estimated revenues are given to the transportation department and translated into gross ton-miles, tons handled at principal stations, cars handled in principal yards, cars floated, and passenger train-miles. These units of volume are then separated by divisions, and each superintendent sub-divides the year's totals given him into months in accordance with past experience in his territory.

As is explained in much greater detail in Mr. Slater's article, the New Haven transportation budget is divided between fixed and variable expenses, the latter being those appreciably affected by volume of traffic handled, and including all freight train wages and fuel, all passenger train wages and fuel, wages and fuel at principal yards, wages at principal freight stations, and on one division, wages and fuel in floating. The remaining expenses, varying from 28 per cent to 56 per cent of the total division expenses, are thrown into one group of fixed expenses.

During October, the representative of the general manager in charge of the budget and a representative of the general superintendent go to each division headquarters and meet with the superintendent and his staff. At this meeting agreement is reached as to the following allowances for the coming year:

Wages and fuel per 1,000 gross ton-miles in freight train service.

Wages and fuel per passenger train-mile in passenger service.

Wages and fuel per car handled at principal yards.

Wages per ton handled at principal stations.

There are further refinements, of course, in electrical, gas-car and marine operations. Also, because of the differing weather conditions in New England, higher allowances are given during the winter months than in the summer, and recently we have found it advantageous to make a third group to include the months in the fall and spring.

At the conclusion of this meeting, the superintendent knows that he is allowed so many cents for crew wages for each 1,000 gross ton-miles in freight service and each passenger train-mile operated on his division, so many pounds of coal or so many K.W.H. per 1,000 gross ton-miles or per passenger train-mile, with the same general scheme applying to yard, station and marine operations, and by applying these units to the estimated volume of business previously described and adding to them the fixed expenses we have available, the expenses for which the superintendent is responsible by months for one year in advance. It is not expected that the volume of business will correspond with the estimate, but it will be within three or four per cent, and, as Mr. Slater explained in detail, fluctuations in volume are adjusted through the method of making allowances and by the application of various factors. That is, if gross ton-miles are 10 per cent greater than estimated, we do not allow the superintendent an increase of 10 per cent in wages and fuel, because, with such a volume, the average train, and especially the local freights, will be loaded somewhat heavier. To cover this feature, factors varying in accordance with experience on the various divisions are first applied. This same method is followed when the volume is less than contemplated.

After the transportation budget is completed, which is prior to the beginning of the year, it is combined with the budgets submitted by the maintenance of way and mechanical departments, as well as those of the general, traffic and other departments, and there are available the total operating expenses contemplated for the coming year. Matched against the estimated revenues and carried down through the income account, the management has before it its estimated net income for the coming year. This is the important basis for our opinion that the annual budget is preferable, as it aids the management in making its plans for the entire year, which, of course, has a bearing not only on maintenance, but on the provision of new and often badly needed facilities, as with a low net in prospect, a road without adequate resources will not plan so extensive an improvement program as when the prospective net is favorable.

With several years' experience with its transportation budget, the New Haven has at no time had difficulty in adjusting the budget to the actual volume of business moving. It adjusts itself. For example, on one division in 1926, on the basis of the volume contemplated prior to the beginning of the year, the superintendent was allowed a total of \$1,467,388. Because the volume ran greater than contemplated, his allowance was automatically increased to \$1,499,106, and he actually spent \$1,492,947. That is, he was under his budget adjusted for volume of traffic by \$6,159. Under the old-fashioned method of checking expenses, which obtains on too many roads even today, the alibi that an increased volume of traffic was handled covers almost anything. However, on the New Haven in 1926, our operating revenues were about 4 per cent above the budget set up. Without a well-defined check, if transportation expenses increase only \$1,500,000, with an increase in earnings of \$5,000,000, everybody concerned would feel they had made a good showing. On the New Haven, our superintendents, because of the increased volume, were allowed an increase in their budgets of only \$619,178, and they actually under-ran this allowance by \$66,679.

If I have counted correctly, the Illinois Central expects its superintendents each month to study in detail and make estimates for 66 separate expense accounts. Apparently, they are expected to estimate such items as water, lubricants and other supplies for locomotives, lighting passenger cars, telegraph and

telephone supplies and expenses, stationery and printing and other expenses, loss and damage to baggage, etc. This is one of the things that the New Haven has endeavored to eliminate. It prefers to have its superintendents concentrate on the matters where the large sums of money are involved. That is, it goes on the basis that if superintendents are making good records with respect to the wages of crews and fuel consumption, there is not much cause for worry about the water, lubricants and other supplies of the locomotive, as they will automatically follow. Such items make up the one group of fixed expenses, but because they go there they are not forgotten. The superintendents are continually studying the possibilities for reducing their fixed expenses and are succeeding as indicated by the fact that in 1926, notwithstanding a very considerable increase in traffic, the fixed expense portion of the superintendents' budgets actually decreased \$147,631 under the previous year.

Neither do we believe in frequent regular meetings. As long as superintendents are running even with or under their budgets (and each year their allowances are reduced because we are constantly giving them a better machine to work with and the expenditure for this improved machine must be accompanied by reduction in operating expenses), we do not call them in for meetings. When a division is over its budget, the representatives of the general manager and general superintendent go to division headquarters and study the situation with the superintendent. The general manager, the comptroller and other officers follow the situation closely, but it has been our experience that while an occasional budget meeting with superintendents and general superintendents is necessary and desirable, there is nothing gained by frequent regular meetings which all too soon tend to become routine affairs.

It is for these reasons that we, on the New Haven, while realizing fully that our budget plan is by no means perfect, are sure that it is increasing in value each year because of the benefit of additional experience obtained, and believe that the annual budget, which is possible on any road with the proper accounting organization, with its flexible features which meet all the requirements of varying volumes of traffic, is preferable to any monthly plan.

DON. M. NEISWANGER,

Assistant to General Manager, N. Y., N. H. & H. R. R.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

The Anthracite Railroads—Study in American Enterprise, by Jules I. Bogen. The history of the Reading, the Delaware, Lackawanna & Western, the Lehigh Valley, the Central of New Jersey and the Delaware & Hudson is "here treated as a unit, and the effects upon the company of the economic and financial developments of the time are shown," p.v. 281 p. Pub. by Ronald Press, New York City, \$4.25.

Proceedings of the 38th Annual Convention of the National Association of Railroad and Utilities Commissioners, 1926. Besides important committee reports and addresses, including Commissioner Esch's on the "Breadth of the Commerce Clause," this volume contains uniform classifications of accounts for bus companies. 536 p. Pub. by the Association, New York City. \$5.

Regulation of Security Issues by the Interstate Commerce Commission, by David Philip Locklin. University of Illinois studies in social sciences, v. 13, no. 4. 189 p. Pub. by University of Illinois, Urbana, Ill. \$1.50.

Periodical Articles

The Analysis of Equipment Trust Securities, I-II, by W. Barrett Brown. *Annalist*, Feb. 11, 1927, p. 237-238, and March 11, 1927, p. 365-366.

Onward to Ownership, by Gustavus Myers. Survey of the tendency to diffusion of stock ownership, and various opinions as to the ultimate results. *Century Magazine*, April, 1927, p. 714-720.

Productivity of Railroad Labor, by Walter H. Dunlap. *Monthly Labor Review*, March, 1927, p. 1-8.

Looking Backward

Fifty Years Ago

The Boston & Maine strike has had some results which were never anticipated by the strikers. Massachusetts, New Jersey, Pennsylvania, Delaware and Michigan have passed laws making it a punishable misdemeanor for an engineman to abandon his engine before completing his trip.—*Railroad Gazette*, March 30, 1877.

The Philadelphia & Reading has notified railroads with which it exchanges freight that on and after April 2 the company will impose a penalty of 50 cents for each four-wheel car and \$1 for each eight-wheel car for every 24 hours that they remain upon the tracks at Port Richmond after the day of delivery.—*Chicago Railway Review*, March 31, 1877.

Twenty-Five Years Ago

Benjamin McKeen, superintendent of the Vandalia, has been appointed superintendent of terminals of the Pennsylvania at Chicago. W. P. Bruce, trainmaster on the Nashville, Chattanooga & St. Louis, has been promoted to superintendent of terminals. Earl Stimson, assistant division engineer on the Baltimore & Ohio Southwestern at Chillicothe, Ohio, has been promoted to division engineer of the Springfield division, with headquarters at Flora, Ill.—*Railway and Engineering Review*, April 5, 1902.

"The ultimate danger which confronts us is the excessive transportation charge; the danger that this species of property, owned and controlled by the very wealthy, will impose upon every other species of property, and therefore upon the poorer classes, an unjust tax," declared Charles A. Prouty, member of the Interstate Commerce Commission, before the Illinois Manufacturers' Association on April 2. "The Government should compel the charging of just and reasonable tariffs. When there is some competent tribunal, clothed with the power to inquire whether a railway rate is just, and to make it just if found unjust, the danger of railway combinations will cease."—*Railway Age*, April 4, 1902.

Ten Years Ago

The suit of the United States government to separate the Central Pacific from the Southern Pacific on the grounds that they were competing lines and that their joint operation constituted a restraint of trade in violation of the Sherman anti-trust act of 1890 was decided in the United States District Court of Utah on March 10 in favor of the defendants.—*Railway Age*, March 30, 1917.

Ralph N. Begien, chief engineer of the Baltimore & Ohio, has been appointed general manager of the Eastern lines of the system. Elisha Lee, assistant general manager of the Pennsylvania Railroad lines east of Pittsburgh and Erie, has been appointed general manager. H. A. Lane, assistant chief engineer of the Baltimore & Ohio at Baltimore, Md., has been appointed chief engineer.—*Railway Review*, March 31, 1917.

"The credit of American railways is not as good as the public interest requires," testified Julius Kruttschnitt, chairman of the executive committee of the Southern Pacific, before the Joint Congressional Committee on Interstate Commerce at Washington last week. "It is due partly to the inability of the railroads to increase their revenues promptly to meet their need . . . If the present system, or lack of system, of regulation is continued there will be stagnation in railroad development and the people will not have the character of railroad transportation that the business interests of the country require."—*Railway Age*, March 30, 1917.

Odds and Ends of Railroading

Telephone Pests

Wouldn't it be a joyous act
Of undiluted bliss,
To smash the goof who greets you
On the phone with, "who is ziss?"
SOUTHERN PACIFIC BULLETIN.

Yes, that would be a lot of fun,
We all know that is true.
But how about this other bird
Who always says, "Guess who?"
MISSOURI PACIFIC MAGAZINE.

But he who irks me worst of all—
I wish he was in h—;
That dizzy gink who answers
With a sharp, pugnacious "Well?"
L. & N. MAGAZINE.

The pompous cuss annoys us most,
Conceited and full of swank,
Who tells us, stiff as any post,
"You're talking to Mr. Blank."

The newest Florida railroad commissioner is the mother of five children. She is Mrs. Robert L. Eaton, and she succeeds her husband, who died last February after having served less than two months. Gov. Martin, in making the appointment, said: "Florida women must take their part in the affairs of the government."

A suggestion that Boston & Maine buses be named in honor of distinguished members of a certain association was firmly opposed by one member who phoned the association headquarters as follows: "Imagine," said he, "with what emotions we might learn that the 'Ralph E. Smith' or the 'George N. Burke' was observed going down Main street, full."

Railroad employees working in peculiar places being a subject on the docket, here is another one (writes M. H. B.): Johnnie Burnham, some years ago, left his New England railroad job, where he got small pay, to seek his fortune in the west. The very first letter received by his brother (it was from Texas) told that he had readily got a railroad job, as engineer. Congratulations and further correspondence, including questions as to location, working conditions, companions, etc., developed that Johnnie ran a pumping engine; location, at the foot of a bluff twelve hundred feet below track level; hours per day 12; companions—none.

A hobo chased by an Illinois Central brakeman found refuge, such as it was, by jumping down the manhole of the locomotive tender tank, if press dispatches from Yazoo City, Miss., are to be believed. The unfortunate dead-head, however, so the story continues, found the water too low in the tank to allow him to reach the manhole again and too high for him to touch bottom. The only alternative left to a life-loving wayfarer was to swim, and swim he did until the engine used water enough so that his feet could touch bottom. While he was swimming he traveled 30 miles in probably not more than an hour, which, we suppose, just about sets the record for natatorial speed.

A clerk in the office of a southwestern railroad was sitting peacefully at his work when a tornado struck the town and knocked things helter-skelter. The clerk put out all the kerosene lamps in the office to prevent fire and then tried to communicate with the dispatcher. He was unsuccessful in this, as the wires were down. Seizing a flashlight, he rushed west along the track and flagged a passenger train to prevent it from running into the debris that had been blown over the rails. Then he rushed back in the opposite direction and flagged a freight train. Do you

think that's a movie scenario born in some fertile Hollywood brain? It isn't, it actually happened.

Any time that Harvey B. Child, passenger brakeman on the Salt Lake division of the Southern Pacific, feels that his interest in railroading is waning he seems perfectly qualified to assume the title of "Soldier of Fortune," dropped immediately after the World war. Not that Mr. Child does not have a perfect right to that title at the present time, with service to his credit as a volunteer in three wars—Boer, Spanish-American and World. When decked out in his uniform he displays the McKinley Congressional, the Spanish, the Philippine and the Victory medals on his coat and carries personal letters from Major General Otis, General Funston and General McArthur in an inner pocket. He will attend the American Legion convention in Paris as the representative of Nevada on the Legion Guard of Honor composed of 125 men.

Letting Him Down Easy

According to the "Boletin de Obras Publicas," the official publication of the department of public works of the Argentine Republic (the department having control of railway affairs), an employee of the department desired to know if he would be permitted to put in a bid as contractor for some work for which the department was advertising for bids. The official action, signed by the minister of public works, came back substantially as follows:

"Considering that, for reasons of administrative ethics, the petitioner's request is not granted, since it would be inadmissible that an employee of the government should act at the same time as a contractor with it; that, apart from inconvenience of an ethical nature that would arise, it is to be supposed that an employee who at the same time has in his charge works under contract with the government will not be able to attend to both matters at once with the requisite concentration and efficiency; for these reasons and in accord with the declaration in this respect by the general Auditor of the Nation and the Counselor of the Treasury; the Minister of Public Works decides: 'Let it be made known to the petitioning employee . . . that for reasons above expressed, it will not be permitted to him to intervene in the proceedings to which reference has been made.' Published, communicated and entered upon the archives."



P. & A. Photo

Mrs. Bella B. Toner

Agent of the Reading at New Centerville, Pa.
Mrs. Toner today, April 2, completes 52 years' service as agent and operator at New Centerville. She reads *Morse* by paper.

NEWS of the WEEK



Western Pacific—Photo by H. F. O'Neil

THE UNITED STATES RAILROAD BOARD OF MEDIATION will arbitrate the demand of the clerks of the Chicago & Eastern Illinois for increase in pay of 10 cents an hour.

THE DEMAND for increases in pay of five cents an hour made by the maintenance of way employees of the Chicago & North Western will be arbitrated by the federal mediation board.

THE CENTRAL RAILWAY CLUB of Los Angeles, Cal., will hold its May meeting on May 12 at Hotel Statler, Buffalo, N. Y., when a paper will be read on "The Limited Cut-Off Engine" by Harry S. Vincent, Franklin Railway Supply Company.

THE PACIFIC RAILWAY CLUB will hold its next meeting on April 13 at the University of California, Berkeley, Cal., when a paper will be read on "Modern Locomotive Design and Its Influence Upon Railway Operation" by W. E. Woodard, vice-president, Lima Locomotive Works.

THE HOTEL SASKATCHEWAN will be the name of the new hotel which the Canadian Pacific is building in Regina. The hostelry will contain 284 bedrooms with bath, a rotunda, main dining room and foyer, tea room, grill room, ballroom and foyer, lounge room library, committee room, private dining room, suites, ticket and telegraph offices, concessions for newspapers and tobacco, and the usual offices. The cost will be \$1,500,000, and opening is scheduled for May 24.

THE BOARD OF DIRECTION of the National Association of Manufacturers, at a meeting in Atlanta, Ga., last week, acting on the recommendations contained in a report presented by S. P. Bush, chairman of a committee, telegraphed to President Coolidge, asking that he consider the re-appointment of members of the Interstate Commerce Commission (whose terms are soon to expire) where the duties of the office have been intelligently, fairly and faithfully performed; and to show his confidence in the incumbent by sufficient advance notice so that the commissioner's efficiency may not be impaired by reason of uncertainty as to his tenure. The manufacturers' protest against proposed

legislation requiring nominees for the Interstate Commerce Commission to be selected according to geographical lines.

Protective Section, A. R. A., at San Francisco

J. C. Gale, chairman of the Protective Section of the American Railway Association, announces that the annual meeting of the Section will be held at Hotel St. Francis, San Francisco, Cal., on June 21, 22 and 23. The annual convention of the American Association of Railroad Superintendents is scheduled for San Francisco in the same week.

New York Central Clerks' 6 Per Cent Wage Increase

An increase of 6 per cent in wages, adding about \$2,000,000 to the pay roll of the New York Central was granted clerks, freight handlers and station employees of that road, following a hearing, lasting about a month, before a board of arbitration of which Victor Seldon Clark was neutral chairman. W. B. Wilson, former secretary of labor, represented the men, and D. W. Dinan, general manager of the New York Central, represented the road. The decision was effective as of March 16. Before this increase there was an increase of three cents an hour in 1923.

Railroads and Radio

Among those who appeared at a hearing before the new Federal Radio Commission at Washington on March 29 to protest against a proposal that the present "broadcasting band" of wave-lengths be widened to allow more "room" in the air for more radio stations was G. T. Stanton, chairman of a radio committee representing the railways, who said that the roads are experimenting with various methods of radio communication on wave-lengths below 200 meters. The commission is gathering expressions on a proposal to include wave-lengths between 150 and 200 meters in those to be allowed broadcasting stations.

Canadian Clerks' Wage Cases

A chairman for the board of conciliation to consider the wage increase demand by freight clerks and handlers, members of the Canadian Brotherhood of Railway Employees employed on the Canadian National, will be named this week by the Minister of Labor. Howard Ross of Montreal has been chosen the employees' representative and Peter White of Toronto the company's representative.

Efforts are being continued by the Minister of Labor at Ottawa to avert a strike of freight handlers and clerks in the employ of the Canadian Pacific. These men, numbering about 5,000, are members of the International Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees. A short time ago the company announced its refusal of their demands for an increase in wages and altered working conditions.

Arbitration for Western Trainmen

The railroads in the territory west of Chicago and representatives of the Order of Railway Conductors and the Brotherhood of Railway Trainmen have selected four men as members of an arbitration group which will adjust the controversy over wage increases recently asked by the train service employees. Those selected are W. J. Jackson, chairman of the executive committee of the Chicago & Eastern Illinois, and J. W. Higgins, executive secretary of the Association of Western railways, to represent the railroads, and E. P. Curtis, secretary and treasurer of the Order of Railway Conductors, and J. A. Farquharson, vice-president of the Brotherhood of Railroad Trainmen, to represent the employees. These men will meet to pick two neutral members.

Simpler Patent-Office Rules

Procedure before the patent office and in the courts has been much simplified by acts of Congress passed February 7 and 14 and March 2 and 3 amending the patent laws. Amendments to applications must be filed

(Continued on page 1082)

Freight Operating Statistics of Large Steam Roads—Selected Items for January, 1927.

| Region, road and year | Average miles of road operated | Locomotive-miles | | | | Car-miles | | Ten-miles (thousands) | | Average number of locomotives on line daily | | | |
|--------------------------------|--------------------------------|------------------|----------------------|-----------|--------------------|-----------------|--|------------------------------|-------------|---|------------------------|--------|-----|
| | | Train-miles | Principal and helper | Light | Loaded (thousands) | Per cent loaded | Gross, excluding locomotive and tender | Net. Revenue and non-revenue | Serviceable | Unserviceable | Per cent unserviceable | Stored | |
| | | | | | | | | | | | | | |
| New England Region: | | | | | | | | | | | | | |
| Boston & Albany..... | 1927 | 407 | 246,236 | 264,435 | 30,027 | 4,739 | 64.5 | 255,716 | 96,390 | 113 | 13 | 10.4 | 3 |
| | 1926 | 407 | 240,432 | 260,579 | 29,859 | 4,720 | 69.8 | 234,169 | 87,306 | 109 | 23 | 17.0 | 3 |
| Boston & Maine..... | 1927 | 2,094 | 474,818 | 550,372 | 45,844 | 11,649 | 68.6 | 603,496 | 236,082 | 290 | 70 | 19.4 | 29 |
| | 1926 | 2,250 | 471,293 | 533,708 | 43,837 | 11,579 | 72.8 | 556,177 | 218,343 | 330 | 100 | 23.2 | 54 |
| N. Y., New H. & Hartf..... | 1927 | 1,884 | 508,101 | 530,227 | 36,796 | 12,663 | 67.7 | 661,751 | 265,998 | 272 | 74 | 21.4 | 8 |
| | 1926 | 1,892 | 463,354 | 472,885 | 30,120 | 12,032 | 70.4 | 585,320 | 226,938 | 280 | 51 | 15.4 | 27 |
| Great Lakes Region: | | | | | | | | | | | | | |
| Delaware & Hudson..... | 1927 | 875 | 361,170 | 489,393 | 54,827 | 9,420 | 61.5 | 616,265 | 300,851 | 245 | 36 | 12.7 | 73 |
| | 1926 | 875 | 284,749 | 386,323 | 46,612 | 7,463 | 63.9 | 444,298 | 202,700 | 239 | 39 | 13.9 | 110 |
| Del., Lack. & Western..... | 1927 | 999 | 564,398 | 651,382 | 78,397 | 16,631 | 66.3 | 952,745 | 397,372 | 261 | 51 | 16.4 | 10 |
| | 1926 | 993 | 479,577 | 545,688 | 60,377 | 14,331 | 68.9 | 747,812 | 292,954 | 296 | 50 | 14.4 | 73 |
| Erie (inc. Chic. & Erie)..... | 1927 | 2,317 | 999,000 | 1,114,569 | 113,735 | 33,094 | 63.6 | 2,062,617 | 917,197 | 531 | 119 | 18.3 | 73 |
| | 1926 | 2,323 | 924,148 | 1,014,276 | 115,243 | 30,995 | 63.7 | 1,849,789 | 783,835 | 594 | 100 | 14.5 | 207 |
| Lehigh Valley..... | 1927 | 1,346 | 608,640 | 669,938 | 75,287 | 16,700 | 62.1 | 1,021,469 | 448,881 | 386 | 62 | 13.8 | 51 |
| | 1926 | 1,345 | 507,364 | 549,163 | 79,156 | 14,505 | 65.1 | 802,975 | 324,329 | 412 | 88 | 17.7 | 100 |
| Michigan Central..... | 1927 | 1,870 | 540,897 | 563,361 | 19,354 | 16,714 | 60.7 | 952,956 | 343,810 | 252 | 62 | 19.7 | 67 |
| | 1926 | 1,835 | 581,481 | 599,353 | 20,230 | 18,503 | 62.3 | 997,113 | 350,932 | 286 | 56 | 16.3 | 86 |
| New York Central..... | 1927 | 6,482 | 2,272,310 | 2,624,671 | 195,924 | 75,683 | 59.8 | 4,928,048 | 2,187,400 | 1,114 | 325 | 22.6 | 178 |
| | 1926 | 6,482 | 2,325,825 | 2,662,354 | 188,873 | 75,923 | 61.1 | 4,792,490 | 2,109,318 | 1,105 | 326 | 22.8 | 150 |
| New York, Chic. & St. L..... | 1927 | 1,665 | 677,734 | 684,921 | 8,476 | 20,004 | 62.9 | 1,142,765 | 447,401 | 244 | 60 | 19.8 | 53 |
| | 1926 | 1,665 | 711,123 | 721,777 | 7,477 | 20,367 | 63.2 | 1,148,207 | 449,178 | 234 | 72 | 23.5 | 35 |
| Pere Marquette..... | 1927 | 2,181 | 396,820 | 402,282 | 5,624 | 9,539 | 62.9 | 572,718 | 248,236 | 183 | 35 | 15.9 | 27 |
| | 1926 | 2,198 | 412,260 | 420,907 | 6,075 | 9,747 | 61.6 | 586,558 | 247,536 | 187 | 30 | 13.9 | 21 |
| Pitts. & Lake Erie..... | 1927 | 231 | 149,549 | 151,275 | 2,795 | 4,517 | 61.1 | 362,023 | 206,185 | 57 | 15 | 20.5 | 8 |
| | 1926 | 231 | 147,804 | 149,702 | 1,326 | 4,877 | 61.4 | 372,030 | 208,695 | 68 | 13 | 15.5 | 20 |
| Wabash..... | 1927 | 2,497 | 772,418 | 807,317 | 12,186 | 21,550 | 62.5 | 1,245,087 | 476,410 | 327 | 61 | 15.7 | 48 |
| | 1926 | 2,497 | 752,694 | 787,747 | 10,666 | 21,578 | 65.4 | 1,218,148 | 490,702 | 317 | 57 | 15.3 | 54 |
| Central Eastern Region: | | | | | | | | | | | | | |
| Baltimore & Ohio..... | 1927 | 5,212 | 2,008,062 | 2,356,805 | 196,115 | 54,017 | 58.9 | 3,728,952 | 1,775,228 | 1,020 | 225 | 18.1 | 53 |
| | 1926 | 5,197 | 2,056,878 | 2,422,818 | 179,284 | 55,643 | 61.0 | 3,697,721 | 1,773,652 | 990 | 204 | 17.1 | 44 |
| Central of New Jersey..... | 1927 | 691 | 276,342 | 301,289 | 34,243 | 7,024 | 56.1 | 485,264 | 227,529 | 210 | 37 | 15.0 | 16 |
| | 1926 | 691 | 250,450 | 275,039 | 36,600 | 5,862 | 61.1 | 361,564 | 171,776 | 244 | 27 | 10.0 | 53 |
| Chicago & Eastern Ill..... | 1927 | 945 | 327,590 | 338,589 | 5,011 | 7,927 | 61.7 | 526,303 | 256,807 | 112 | 45 | 28.5 | 14 |
| | 1926 | 945 | 315,053 | 319,857 | 5,749 | 7,868 | 60.7 | 504,346 | 243,541 | 117 | 35 | 23.2 | 20 |
| Clev., Cin. Chic. & St. L..... | 1927 | 2,374 | 790,061 | 825,909 | 24,531 | 21,917 | 59.2 | 1,501,895 | 706,676 | 349 | 85 | 19.6 | 33 |
| | 1926 | 2,374 | 805,277 | 843,563 | 29,528 | 23,095 | 60.3 | 1,533,359 | 723,423 | 324 | 90 | 21.7 | 4 |
| Elgin, Joliet & Eastern..... | 1927 | 461 | 146,518 | 156,390 | 6,869 | 3,686 | 59.4 | 298,438 | 153,720 | 81 | 12 | 12.8 | 1 |
| | 1926 | 460 | 137,294 | 145,679 | 7,178 | 3,830 | 62.7 | 293,694 | 152,674 | 83 | 13 | 13.2 | ... |
| Long Island..... | 1927 | 393 | 41,775 | 44,707 | 11,975 | 499 | 55.4 | 33,069 | 12,653 | 43 | 10 | 19.4 | ... |
| | 1926 | 393 | 39,730 | 45,629 | 11,332 | 433 | 56.3 | 27,828 | 10,144 | 42 | 8 | 16.6 | ... |
| Pennsylvania System..... | 1927 | 10,887 | 5,037,888 | 5,531,567 | 444,792 | 132,441 | 60.5 | 9,209,488 | 4,334,542 | 2,871 | 419 | 12.7 | 267 |
| | 1926 | 10,879 | 5,034,507 | 5,535,036 | 450,193 | 131,527 | 62.5 | 8,824,399 | 4,156,699 | 2,710 | 618 | 18.6 | 57 |
| Reading..... | 1927 | 1,129 | 691,896 | 757,464 | 72,410 | 16,797 | 56.2 | 1,259,185 | 635,876 | 319 | 73 | 18.7 | 17 |
| | 1926 | 1,129 | 689,619 | 763,061 | 81,297 | 16,696 | 57.9 | 1,191,827 | 596,187 | 387 | 80 | 17.2 | 114 |
| Poconos Region: | | | | | | | | | | | | | |
| Chesapeake & Ohio..... | 1927 | 2,651 | 1,268,240 | 1,365,371 | 60,504 | 39,292 | 56.1 | 3,235,122 | 1,765,401 | 560 | 82 | 12.8 | 34 |
| | 1926 | 2,631 | 1,292,581 | 1,396,398 | 47,572 | 37,640 | 55.8 | 3,066,845 | 1,660,711 | 508 | 87 | 14.6 | 3 |
| Norfolk & Western..... | 1927 | 2,232 | 925,973 | 1,132,821 | 43,800 | 30,944 | 59.4 | 2,619,011 | 1,450,013 | 538 | 59 | 9.9 | 92 |
| | 1926 | 2,231 | 970,907 | 1,201,799 | 50,144 | 30,392 | 59.5 | 2,547,175 | 1,388,015 | 576 | 62 | 9.8 | 110 |
| Southern Region: | | | | | | | | | | | | | |
| Atlantic Coast Line..... | 1927 | 4,996 | 807,666 | 811,320 | 14,626 | 20,335 | 59.6 | 1,180,722 | 454,470 | 409 | 56 | 12.1 | 55 |
| | 1926 | 4,924 | 918,505 | 933,288 | 15,683 | 21,616 | 60.2 | 1,246,702 | 479,530 | 393 | 45 | 10.4 | 7 |
| Central of Georgia..... | 1927 | 1,898 | 301,999 | 305,726 | 7,757 | 7,244 | 68.9 | 401,493 | 174,593 | 149 | 16 | 9.5 | 12 |
| | 1926 | 1,907 | 329,800 | 332,698 | 5,987 | 7,250 | 70.0 | 397,598 | 176,898 | 152 | 22 | 12.4 | 22 |
| I. C. (inc. Y. & M. V.)..... | 1927 | 6,555 | 2,012,937 | 2,025,647 | 46,562 | 52,497 | 61.1 | 3,503,318 | 1,543,888 | 792 | 99 | 11.1 | 16 |
| | 1926 | 6,555 | 2,117,484 | 2,133,607 | 45,032 | 55,225 | 62.2 | 3,593,267 | 1,603,789 | 781 | 109 | 12.2 | 8 |
| Louisville & Nashville..... | 1927 | 5,044 | 1,810,010 | 1,888,573 | 62,951 | 35,526 | 59.8 | 2,473,725 | 1,216,753 | 599 | 116 | 16.3 | 6 |
| | 1926 | 5,021 | 1,950,827 | 2,101,996 | 71,924 | 36,267 | 60.5 | 2,491,130 | 1,219,855 | 610 | 102 | 14.3 | 1 |
| Seaboard Air Line..... | 1927 | 4,198 | 616,180 | 629,136 | 8,724 | 15,198 | 62.9 | 896,123 | 362,460 | 244 | 44 | 15.2 | ... |
| | 1926 | 4,013 | 631,846 | 641,527 | 11,604 | 14,750 | 64.0 | 860,818 | 347,457 | 251 | 34 | 11.0 | ... |
| Southern Railway System..... | 1927 | 8,021 | 1,983,533 | 2,017,590 | 37,553 | 48,063 | 63.0 | 2,787,610 | 1,142,416 | 1,080 | 172 | 13.8 | 30 |
| | 1926 | 8,043 | 2,197,045 | 2,248,214 | 41,363 | 49,715 | 63.2 | 2,882,882 | 1,183,801 | 1,032 | 167 | 13.9 | 42 |
| Northwestern Region: | | | | | | | | | | | | | |
| Chic. & North Western..... | 1927 | 8,461 | 1,539,700 | 1,597,274 | 29,878 | 33,837 | 60.5 | 2,055,491 | 795,161 | 759 | 153 | 16.8 | 103 |
| | 1926 | 8,469 | 1,500,118 | 1,553,165 | 30,318 | 32,992 | 62.1 | 1,947,045 | 772,631 | 734 | 195 | 21.0 | 75 |
| Chic., Milw. & St. P..... | 1927 | 11,197 | 1,604,100 | 1,711,400 | 96,318 | 42,444 | 64.4 | 2,486,639 | 1,080,571 | 798 | 192 | 19.4 | 158 |
| | 1926 | 11,202 | 1,554,642 | 1,680,597 | 91,589 | 42,533 | 65.7 | 2,413,067 | 1,058,643 | 891 | 199 | 18.2 | 162 |
| Chic., St. P., Minn. & Om..... | 1927 | 1,724 | 322,063 | 341,564 | 17,279 | 6,139 | 65.5 | 339,082 | 141,950 | 158 | 34 | 17.7 | ... |
| | 1926 | 1,819 | 334,659 | 361,790 | 15,705 | 6,358 | 65.2 | 355,475 | 150,576 | 171 | 34 | 16.5 | 4 |
| Great Northern..... | 1927 | 8,164 | 714,799 | 741,031 | 44,525 | 21,485 | 69.6 | 1,228,251 | 566,334 | 566 | 148 | 20.7 | 143 |
| | 1926 | 8,222 | 703,987 | 729,500 | 39,150 | 21,528 | 69.4 | 1,212,335 | 564,072 | 615 | 142 | 18.8 | 180 |
| M., St. P. & S. Ste. M..... | 1927 | 4,368 | 512,945 | 527,561 | 4,236 | 11,434 | 68.2 | 615,277 | 274,302 | 298 | 33 | 10.0 | 25 |
| | 1926 | 4,372 | 504,180 | 517,411 | 4,762 | 11,741 | 69.8 | 606,613 | 269,626 | 295 | 46 | 13.5 | 32 |
| Northern Pacific..... | 1927 | 6,510 | 705,981 | 742,887 | 43,499 | 21,065 | 73.7 | 1,141,680 | 517,487 | 505 | 133 | 20.8 | 106 |
| | 1926 | 6,510 | 740,570 | 775,412 | 43,758 | 22,855 | 74.2 | 1,241,593 | 585,906 | 539 | 132 | 19.7 | 120 |
| Oreg.-Wash. R. R. & Nav..... | 1927 | 2,164 | 181,636 | 191,808 | 16,468 | 4,736 | 72.8 | 272,608 | 128,472 | 140 | 21 | 13.2 | 15 |
| | 1926 | 2,185 | 173,337 | 184,422 | 16,425 | 4,988 | 74.5 | 274,202 | 127,872 | 138 | 25 | 15.5 | 12 |
| Central Western Region: | | | | | | | | | | | | | |
| Atch., Top. & S. Fe..... | 1927 | 10,301 | 1,910,442 | 2,048,025 | 100,980 | 54,247 | 59.6 | 3,407,808 | 1,268,399 | 765 | 167 | 17.9 | 84 |
| (incl. P. & S. F.)..... | 1926 | 10,143 | 1,575,349 | 1,675,950 | 84,698 | 46,045 | 62.8 | 2,738,877 | 1,011,175 | 808 | 162 | 16.7 | 223 |
| Chicago & Alton..... | 1927 | 1,022 | 309,923 | 336,748 | 5,212 | 6,812 | 58.2 | 448,550</ | | | | | |

Compared with January, 1926, for Roads with Annual Operating Revenues Above \$25,000,000

| Region, road and year | Average number of freight cars on line daily | | | Per cent un-serv-ice-able | Gross ton-miles per train-hour, ex-cluding locomotive and tender | Gross tons per train, ex-cluding locomotive and tender | Net tons per train | Net tons per loaded car | Net ton-miles per car-day | Car miles per car-day | Net ton-miles per mile of road per day | Pounds of coal per 1,000 gross ton-miles including locomotive and tender | Locomotive miles per locomotive day |
|-------------------------------------|--|---------|---------|---------------------------|--|--|--------------------|-------------------------|---------------------------|-----------------------|--|--|-------------------------------------|
| | Home | Foreign | Total | | | | | | | | | | |
| New England Region: | | | | | | | | | | | | | |
| Boston & Albany.....1927 | 2,828 | 5,077 | 7,905 | 3.1 | 13,697 | 1,039 | 391 | 20.3 | 393 | 30.0 | 7,639 | 230 | 75.1 |
| 1926 | 2,372 | 4,296 | 6,668 | 3.5 | 13,579 | 974 | 363 | 18.5 | 422 | 32.7 | 6,921 | 215 | 70.9 |
| Boston & Maine.....1927 | 15,722 | 10,439 | 26,161 | 6.5 | 13,685 | 1,271 | 497 | 20.3 | 291 | 20.9 | 3,637 | 153 | 53.5 |
| 1926 | 12,885 | 12,468 | 25,353 | 8.7 | 13,186 | 1,180 | 463 | 18.9 | 278 | 20.2 | 3,130 | 165 | 43.3 |
| N. Y., New H. & Hartf.....1927 | 18,441 | 19,395 | 37,836 | 17.6 | 15,796 | 1,302 | 524 | 21.0 | 227 | 16.0 | 4,556 | 143 | 53.0 |
| 1926 | 17,097 | 17,834 | 34,931 | 15.6 | 14,936 | 1,263 | 490 | 18.9 | 210 | 15.8 | 3,869 | 147 | 49.0 |
| Great Lakes Region: | | | | | | | | | | | | | |
| Delaware & Hudson.....1927 | 9,886 | 6,306 | 16,192 | 4.1 | 19,470 | 1,706 | 833 | 31.9 | 599 | 30.5 | 11,089 | 174 | 62.6 |
| 1926 | 12,909 | 5,825 | 18,734 | 3.7 | 18,734 | 1,560 | 712 | 27.2 | 349 | 20.1 | 7,471 | 186 | 50.3 |
| Del., Lack. & Western.....1927 | 17,130 | 7,875 | 25,005 | 3.7 | 19,778 | 1,688 | 704 | 23.9 | 513 | 32.4 | 12,828 | 166 | 75.5 |
| 1926 | 18,205 | 9,073 | 27,278 | 3.3 | 19,570 | 1,559 | 611 | 20.4 | 346 | 24.6 | 9,521 | 193 | 56.5 |
| Erie (inc. Chic. & Erie).....1927 | 34,957 | 21,712 | 56,669 | 7.9 | 23,363 | 2,065 | 918 | 27.7 | 522 | 29.6 | 12,768 | 149 | 61.0 |
| 1926 | 36,919 | 19,717 | 56,636 | 7.3 | 23,561 | 2,002 | 848 | 25.3 | 446 | 27.7 | 10,886 | 145 | 52.5 |
| Lehigh Valley.....1927 | 23,101 | 11,517 | 34,618 | 7.1 | 21,934 | 1,678 | 738 | 26.9 | 418 | 25.0 | 10,760 | 180 | 53.7 |
| 1926 | 22,814 | 9,548 | 32,362 | 6.5 | 22,264 | 1,598 | 646 | 22.4 | 323 | 22.2 | 7,776 | 172 | 40.5 |
| Michigan Central.....1927 | 20,368 | 18,220 | 38,588 | 3.1 | 25,319 | 1,762 | 636 | 20.6 | 287 | 23.0 | 6,095 | 133 | 60.0 |
| 1926 | 17,218 | 18,156 | 35,374 | 4.5 | 24,705 | 1,715 | 604 | 19.0 | 320 | 27.1 | 6,169 | 134 | 58.5 |
| New York Central.....1927 | 71,201 | 74,138 | 145,339 | 3.2 | 25,393 | 2,169 | 963 | 28.9 | 485 | 28.1 | 10,885 | 133 | 63.3 |
| 1926 | 65,803 | 68,903 | 134,706 | 4.0 | 23,929 | 2,061 | 907 | 27.8 | 505 | 29.8 | 10,497 | 140 | 64.3 |
| New York, Chic. & St. L.....1927 | 13,454 | 10,222 | 23,676 | 5.1 | 22,204 | 1,686 | 660 | 22.4 | 610 | 43.3 | 8,668 | 129 | 73.7 |
| 1926 | 13,571 | 10,026 | 23,597 | 4.6 | 21,582 | 1,615 | 632 | 22.1 | 614 | 44.1 | 8,703 | 134 | 76.9 |
| Pere Marquette.....1927 | 10,479 | 7,662 | 18,141 | 3.9 | 17,774 | 1,443 | 626 | 26.0 | 441 | 27.0 | 3,672 | 126 | 60.4 |
| 1926 | 10,166 | 9,561 | 19,727 | 3.9 | 16,444 | 1,423 | 600 | 25.4 | 405 | 25.9 | 3,633 | 129 | 63.6 |
| Pitts. & Lake Erie.....1927 | 11,836 | 9,484 | 21,320 | 4.2 | 26,295 | 2,421 | 1,379 | 45.6 | 312 | 11.2 | 28,736 | 118 | 69.2 |
| 1926 | 12,041 | 7,874 | 19,915 | 7.4 | 24,759 | 2,517 | 1,412 | 42.8 | 338 | 12.9 | 29,085 | 85 | 60.4 |
| Wabash.....1927 | 15,882 | 11,563 | 27,445 | 2.3 | 23,375 | 1,612 | 617 | 22.3 | 560 | 40.1 | 6,155 | 152 | 68.2 |
| 1926 | 13,805 | 11,617 | 25,422 | 2.5 | 22,901 | 1,618 | 652 | 22.7 | 623 | 41.9 | 6,339 | 152 | 68.8 |
| Central Eastern Region: | | | | | | | | | | | | | |
| Baltimore & Ohio.....1927 | 68,944 | 31,938 | 100,882 | 3.5 | 19,137 | 1,857 | 884 | 32.9 | 568 | 29.3 | 10,987 | 184 | 66.1 |
| 1926 | 64,781 | 37,415 | 102,196 | 5.5 | 18,082 | 1,798 | 862 | 31.9 | 560 | 28.8 | 11,008 | 191 | 70.3 |
| Central of New Jersey.....1927 | 19,875 | 13,217 | 33,092 | 4.2 | 16,522 | 1,756 | 823 | 32.4 | 222 | 12.2 | 10,614 | 190 | 43.9 |
| 1926 | 17,603 | 11,506 | 29,109 | 2.3 | 13,841 | 1,444 | 686 | 29.3 | 190 | 10.6 | 8,020 | 207 | 37.1 |
| Chicago & Eastern Ill.....1927 | 13,076 | 4,668 | 17,744 | 24.1 | 20,858 | 1,607 | 784 | 32.4 | 467 | 23.4 | 8,765 | 162 | 70.7 |
| 1926 | 13,076 | 4,780 | 17,856 | 19.8 | 20,880 | 1,601 | 773 | 31.0 | 440 | 23.4 | 8,312 | 162 | 68.9 |
| Clev., Cin., Chic. & St. L.....1927 | 17,753 | 19,977 | 37,730 | 4.5 | 23,502 | 1,901 | 894 | 32.2 | 604 | 31.6 | 9,603 | 142 | 63.2 |
| 1926 | 16,379 | 21,635 | 38,014 | 3.7 | 22,435 | 1,904 | 898 | 31.3 | 614 | 32.5 | 9,830 | 145 | 68.1 |
| Elgin, Joliet & Eastern.....1927 | 9,267 | 6,838 | 16,105 | 4.2 | 13,521 | 2,037 | 1,049 | 41.7 | 308 | 12.4 | 10,766 | 154 | 56.6 |
| 1926 | 9,655 | 7,170 | 16,825 | 5.6 | 14,011 | 2,139 | 1,112 | 39.9 | 293 | 11.7 | 10,711 | 164 | 51.9 |
| Long Island.....1927 | 1,588 | 4,969 | 6,557 | 1.3 | 4,395 | 791 | 303 | 25.4 | 62 | 4.4 | 1,038 | 420 | 34.5 |
| 1926 | 1,937 | 4,160 | 6,097 | 1.2 | 4,300 | 700 | 255 | 23.4 | 54 | 4.1 | 832 | 318 | 36.7 |
| Pennsylvania System.....1927 | 217,125 | 84,092 | 301,217 | 5.0 | 19,303 | 1,828 | 860 | 32.7 | 464 | 23.5 | 12,843 | 155 | 58.6 |
| 1926 | 209,394 | 86,876 | 296,270 | 9.6 | 18,222 | 1,753 | 826 | 31.6 | 453 | 22.9 | 12,325 | 158 | 58.0 |
| Reading.....1927 | 25,486 | 17,720 | 43,206 | 2.2 | 19,444 | 1,820 | 919 | 37.9 | 475 | 22.3 | 18,164 | 176 | 68.2 |
| 1926 | 22,275 | 18,240 | 40,515 | 2.0 | 20,340 | 1,728 | 868 | 35.7 | 475 | 23.0 | 17,035 | 163 | 58.3 |
| Pocahontas Region: | | | | | | | | | | | | | |
| Chesapeake & Ohio.....1927 | 32,080 | 12,200 | 44,280 | 3.0 | 27,290 | 2,551 | 1,392 | 44.9 | 1,286 | 51.0 | 21,482 | 111 | 71.6 |
| 1926 | 31,185 | 14,169 | 45,354 | 3.0 | 23,482 | 2,373 | 1,285 | 44.1 | 1,180 | 47.9 | 20,358 | 124 | 78.4 |
| Norfolk & Western.....1927 | 30,220 | 8,690 | 38,910 | 1.1 | 35,337 | 2,828 | 1,566 | 46.9 | 1,202 | 43.2 | 20,960 | 154 | 63.6 |
| 1926 | 29,383 | 9,039 | 38,422 | 1.4 | 32,482 | 2,624 | 1,430 | 45.7 | 1,165 | 42.9 | 20,066 | 164 | 63.3 |
| Southern Region: | | | | | | | | | | | | | |
| Atlantic Coast Line.....1927 | 24,193 | 13,053 | 37,246 | 3.1 | 18,278 | 1,462 | 563 | 22.3 | 394 | 29.5 | 2,934 | 127 | 57.3 |
| 1926 | 23,165 | 24,496 | 47,661 | 2.9 | 15,125 | 1,357 | 522 | 22.2 | 325 | 24.3 | 3,141 | 140 | 69.8 |
| Central of Georgia.....1927 | 5,486 | 5,142 | 10,628 | 3.4 | 18,505 | 1,330 | 578 | 24.1 | 530 | 31.9 | 2,968 | 148 | 61.3 |
| 1926 | 4,334 | 6,777 | 11,111 | 4.2 | 15,286 | 1,206 | 536 | 24.4 | 514 | 30.1 | 2,993 | 170 | 62.8 |
| I. C. (inc. Y. & M. V.).....1927 | 43,568 | 23,958 | 67,526 | 4.1 | 21,736 | 1,740 | 767 | 29.4 | 738 | 41.1 | 7,598 | 150 | 75.1 |
| 1926 | 43,201 | 26,087 | 69,288 | 3.2 | 21,179 | 1,697 | 757 | 29.0 | 747 | 41.3 | 7,893 | 150 | 79.0 |
| Louisville & Nashville.....1927 | 45,534 | 18,870 | 64,404 | 8.8 | 15,374 | 1,367 | 672 | 34.2 | 609 | 29.7 | 7,782 | 170 | 88.1 |
| 1926 | 42,682 | 27,087 | 69,769 | 7.6 | 13,202 | 1,277 | 625 | 33.6 | 564 | 27.7 | 7,837 | 192 | 98.6 |
| Seaboard Air Line.....1927 | 16,321 | 10,690 | 27,011 | 3.8 | 16,137 | 1,454 | 588 | 23.8 | 433 | 28.9 | 2,785 | 151 | 71.7 |
| 1926 | 12,955 | 16,565 | 29,520 | 1.2 | 14,470 | 1,362 | 550 | 23.6 | 380 | 25.2 | 2,793 | 162 | 74.0 |
| Southern Railway System.....1927 | 58,859 | 25,835 | 84,694 | 6.3 | 18,250 | 1,405 | 576 | 23.8 | 435 | 29.1 | 4,594 | 169 | 52.9 |
| 1926 | 55,280 | 33,024 | 88,304 | 4.9 | 16,026 | 1,312 | 539 | 23.8 | 432 | 28.7 | 4,748 | 180 | 61.6 |
| Northwestern Region: | | | | | | | | | | | | | |
| Chic. & North Western.....1927 | 48,778 | 26,823 | 75,601 | 6.7 | 16,379 | 1,335 | 516 | 23.5 | 339 | 23.9 | 3,032 | 164 | 57.6 |
| 1926 | 48,936 | 27,825 | 76,761 | 7.2 | 15,788 | 1,298 | 515 | 23.4 | 325 | 22.3 | 2,943 | 166 | 55.0 |
| Chic., Milw. & St. P.....1927 | 54,707 | 21,857 | 76,564 | 5.3 | 19,070 | 1,550 | 674 | 25.5 | 455 | 27.8 | 3,113 | 167 | 58.9 |
| 1926 | 55,607 | 21,124 | 76,731 | 5.3 | 19,013 | 1,552 | 681 | 24.9 | 445 | 27.2 | 3,049 | 164 | 52.5 |
| Chic., St. P., Minn. & Om.....1927 | 3,302 | 8,815 | 12,117 | 14.9 | 12,952 | 1,053 | 441 | 23.1 | 378 | 24.9 | 2,657 | 162 | 60.3 |
| 1926 | 3,090 | 8,891 | 11,981 | 11.8 | 12,780 | 1,062 | 450 | 23.7 | 405 | 26.2 | 2,671 | 179 | 59.6 |
| Great Northern.....1927 | 41,869 | 10,096 | 51,965 | 5.7 | 19,957 | 1,718 | 792 | 26.4 | 342 | 19.2 | 2,238 | 161 | 35.5 |
| 1926 | 43,616 | 9,386 | 53,002 | 7.7 | 20,281 | 1,722 | 801 | 26.2 | 343 | 18.9 | 2,213 | 157 | 32.7 |
| M., St. P. & S. Ste. M.....1927 | 19,900 | 5,177 | 25,077 | 3.8 | 13,852 | 1,199 | 535 | 24.0 | 353 | 21.6 | 2,026 | 140 | 51.8 |
| 1926 | 19,257 | 5,469 | 24,726 | 4.4 | 13,891 | 1,203 | 535 | 23.0 | 352 | 21.9 | 1,989 | 135 | 49.4 |
| Northern Pacific.....1927 | 38,524 | 7,539 | 46,063 | 6.5 | 20,681 | 1,617 | 733 | 24.6 | 362 | 20.0 | 2,564 | 164 | 39.8 |
| 1926 | 36,059 | 7,535 | 43,614 | 5.9 | 21,157 | 1,677 | 791 | 25.6 | 433 | 22.8 | 2,903 | 159 | 39.4 |
| Oreg.-Wash. R. R. & Nav.....1927 | 7,629 | 3,653 | 11,282 | 3.8 | 18,789 | 1,501 | 707 | | | | | | |

News of the Week

(Continued from page 1079)

by the inventor within six months following action by an examiner. The reduction of this period from 12 months to six, will check the practice of allowing inventions to lie dormant. The membership of the board of appeals will be increased and under certain conditions an inventor may carry a case directly from this board to a federal court. In interference cases, the privileges of appeal have been curtailed and a final appeal may go direct to a federal court on the patent office record. On patents in which there are more than 20 claims, an additional fee will be imposed. Patented articles hereafter will be marked with the number of the patent instead of its date.

International Commerce Chamber Meeting

The International Chamber of Commerce will meet at Stockholm, Sweden, from June 27 to July 2. An attendance of more than 1,000, representing 43 countries, is expected. The American delegation, it is believed, will exceed 200.

The consensus of opinion of the business men who attend the Stockholm conference will be expressed in the form of resolutions, which, while not binding on the governments of the countries which the delegates represent, will, it is thought, be of practical value as expressions of world business sentiment. In this connection, it is recalled that the Rome meeting of the International Chamber held four years ago played a part in initiating the movement which finally culminated in the Dawes Plan. Owen D. Young and Henry M. Robinson, two of the three American members of the Dawes Commission, are active members of the American Section of the International Chamber.

The program for the Stockholm meeting is as follows:

Monday, June 27 11 a. m., Opening session; 1.30 p. m., Trade Barriers, Bills of Exchange, Highway and Air Transportation; 4 p. m., Tea at the Royal Palace.

Tuesday, June 28 10 a. m., Commercial Letters of Credit, Rail and Air Transportation, Protection of Patents and Trade Marks; 2.30 p. m., Trade Barriers, Double Taxation, Sea Transportation, Bills of Lading, International Arbitration.

Wednesday, June 29 10 a. m., Trade Barriers, International Settlements, Communications, Enforcement of Foreign Judgments; 2.30 p. m., Trade Barriers; 7.45 p. m., Reception given by City of Stockholm.

Thursday, June 30 10 a. m., Plenary session devoted to the economic situation of various countries; 2.30 p. m., Formal session of the Court of Arbitration.

Friday, July 1 10 a. m., and 2.30 p. m., General sessions; 7.45 p. m., Dinner by Swedish National Committee to all delegates.

Saturday, July 2, General sessions.

The C. N. R. in February

An increase in gross earnings of \$869,958, or 4.74 per cent; an increase in net earnings of \$668, and a slightly increased operating ratio for February this year, as compared with the same month last year, are shown in the February statement of the Canadian National.

During February gross earnings of the Canadian National system, including Grand Trunk lines in the United States, were \$19,207,035, against \$18,337,076.32 in Febru-

ary of last year. Operating expenses for the period of 1927 were \$17,782,792.43, against \$16,913,502.61 in February, 1926, an increase of \$869,289.82, or 5.14 per cent. Net earnings for the month were \$1,424,242.57, against \$1,423,573.71. The operating ratio for February, 1927, was 92.58 per cent, against 92.24 per cent in February, 1926.

For the period from January 1 to the end of February, 1927, gross earnings of the system were \$39,375,294, against \$37,038,230.81, an increase of \$2,337,063.19, or 6.31 per cent.

Operating expenses during January and February, 1927, were \$35,916,697.98, against \$33,886,275.49 in the corresponding period of 1926, an increase of \$2,030,422.49, or 5.99 per cent.

Net earnings during the two-month period were \$3,458,596.02 in 1927, against \$3,151,955.32 in 1926, an increase of \$306,640.70, or 9.73 per cent.

A. S. T. M. Holds Spring Meeting of Committees

Following a plan adopted some few years ago, the regular spring group meeting of the committees of the American Society for Testing Materials was held on March 15-18 at Philadelphia, Pa., preparatory to the presentation of reports to the annual convention of the Society which will take place in June. Twenty-five committees were represented at the meeting and among the reports discussed were a number of special interest to the railroads, which included the reports of the Committees on Steel, J. B. Young, engineer of tests, Reading Company, chairman; the Corrosion of Iron and Steel, J. H. Gibboney, chief chemist, Norfolk & Western, chairman; Copper Wire, J. A. Capp, chief of testing laboratory, General Electric Company, chairman; Non-Ferrous Metals and Alloys, William Campbell, metallurgist, New York Navy Yard, chairman; Concrete and Concrete Aggregates, C. M. Chapman, consulting engineer, New York City, chairman; Waterproofing and Roofing Materials, S. T. Wagner, consulting engineer, Reading Company, chairman; and Electrical Insulating Materials, H. S. Vassar, laboratory engineer, Public Service Electric and Gas Co., chairman.

A. R. A. Prizes for Safety Essays

H. A. Rowe, committee chairman, announces that the American Railway Association is going to offer three prizes of \$250 each for essays by young students on the subject "Cross Crossings Cautiously," and circulars have been sent to governors, school authorities and other persons throughout the country with a view of enlisting the enthusiastic efforts of students in grammar and high schools and in colleges. Each essay must be limited to 250 words and competing papers must be in the hands of J. C. Caviston, secretary of the Safety Section, A. R. A., 30 Vesey street, New York City, by June 1. Three persons of national reputation will be selected to act as judges.

The number of persons killed and injured at crossings having been considerably larger in 1926 than in the year preceding,

the committee deems it important to put forth special efforts to make its campaign to "Cross Crossings Cautiously" more effective than in previous years.

One prize will be awarded in each of the three school grades named. The teachers in the schools will be asked to select the best essays from their classes; each principal will decide on the best one from that school and send that one to the county superintendent of schools. The county superintendent will then select the best essay from a grammar student and the best from a high school student, in his county, and send them to Mr. Caviston. Colleges are requested to send direct to New York.

Safety Section Program

The seventh annual meeting of the Safety Section of the American Railway Association opens at the Palmer House, Chicago, on Tuesday morning, April 19. After the usual preliminaries, Thomas H. Carrow, chairman, will present his report, in which he will forecast, from the standpoint of the Safety Section the situation on the railroads of the country in 1930. Other speakers on Tuesday morning will be R. H. Aishton, president of the American Railway Association and L. G. Bentley (C. & O.), chairman of the committee on education.

Tuesday afternoon. Addresses by C. I. Leiper, general manager of the Central region of the Pennsylvania; by D. G. Phillips, (Wabash); and by Dr. Loyal A. Shoudy, chief surgeon of the Bethlehem Steel Corporation; and the report of the highway crossing committee, H. A. Rowe (D. L. & W.), chairman.

Wednesday morning. Four addresses on the responsibilities of four different officers, as follows: The division superintendent by D. F. Stevens, (B. & O.); the division engineer by G. H. Warfel, (U. P.); the trainmaster by J. A. Nichols, (C. C. C. & St. L.); the road foreman by W. C. Bennett, (C. & N. W.). Another address in this series, that on the master mechanic, will be given on Thursday morning by H. W. Maxwell, (N. Y., N. H. & H.).

Wednesday afternoon. General round table discussion, J. E. Long (D. & H.) leading; and the report of the committee on train accidents by F. Hartenstein (L. V.).

Senator Fess at Chicago

"I cannot see how there is to be any radical reduction in rates unless it is by some revision of the rate structure where rates might be reduced upon some articles but the amount lost made up by an additional rate on others," said Senator Simeon D. Fess of Ohio, a member of the Senate Committee on Interstate Commerce in an address at the annual dinner of the Traffic Club of Chicago at the Palmer House on March 20. "But," he continued, "if that is to be done it must be done by men who know the railroad business and not by Congress, which doesn't know anything about the railroad business."

In discussing consolidation, he said that it is not only illogical but it is wholly unsound to attempt to unify the railroads by

legal compulsion. Consolidation cannot be done over night but must be the result of growth under the direction of men who know the railroad business.

"I introduced a measure in the last session to make unification and consolidation a permissive matter. I am greatly interested in it because I fear that it will be a choice between the consolidation of railroads and government ownership in the finality and if there is anything that this country ought to avoid it is the possibility of government ownership and operation of the railroads."

The weak line, he said, presents a difficult problem. He believed that a railroad along which industries have been developed could be made profitable if made a part of a great system. It would be out of the question to abandon it. There are many weak lines and if they are abandoned the section of the country through which they run will suffer. Unless they are attached in a way that they might serve the public at not too great a loss, they will ultimately be ordered operated at the cost of the government. In summarizing he said he was keenly interested in the enactment of a law in the next session permitting the roads of the country to be unified into a limited number of systems, but not compulsory.

Plenty of Coal in Sight

The potential productive capacity of the non-union bituminous coal mines is more than sufficient to meet normal demands in the event of a suspension in the unionized districts on April 1, says a bulletin issued by the Coal Bureau of the Chamber of Commerce of the United States.

The best estimates available give the potential capacity of non-union mines at approximately 10,000,000 tons a week; average weekly consumption for the six months beginning April 1 (based upon average weekly figures for the past five years) 9,250,000 tons. The estimated reserve supply on April 1 is between 70,000,000 and 75,000,000 tons, a total higher than any previous figure. Adding coal in transit, probably between 20,000,000 and 25,000,000 tons, gives a probable total reserve as of April 1 of between 90,000,000 and 100,000,000 tons.

The coal user, however, must bear in mind that the estimates are for the country as a whole, and that in actual practice coal is not evenly divided among different parts of the country or among different classes of consumers.

"In addition to the non-union production," the report continues, "there will be some production from what are termed 'outlying' unionized districts, an important one being central Pennsylvania. The outlying districts are distinguished from the unionized Central competitive field, which comprises the large producing regions of Illinois, Indiana, Ohio and Western Pennsylvania. At present union officials have agreed to permit outlying territories to continue operations at the present wage scale, with the understanding that the operators shall have the option to terminate the existing agreement at any time. It is known that some union men are working in non-union territory. There are no figures to indicate whether or not

they would have any considerable effect on non-union production in case they went on sympathetic strike."

Discussing transportation facilities in the event of a strike, the bulletin explains that "the railroad car supply was a troublesome factor in the coal mining industry in the late war and for a few years following. Since 1923, the railroads have constantly improved the coal car supply, so that the mines in general have been able to secure an ample supply even during the recent periods when production has been the highest in history. New equipment has been added by the carriers and there has been an improvement in operating efficiency. In this connection it will be recalled that there was a railroad shopmen's strike during the bituminous coal strike of 1922.

"Although sympathetic strikes are always a possibility, there are no present indications of disputes likely to interrupt transportation service."

International Railway Fuel Association Program

The International Railway Fuel Association has prepared its program for the nineteenth annual convention to be held on May 10-13 at the Hotel Sherman, Chicago. The program includes speakers from practically every department of a railroad, the work of which has any important relation to the utilization and conservation of fuel.

The complete program is as follows:

TUESDAY, MAY 10

Invocation.
Addresses by E. E. Chapman (A. T. & S. F.), president; Carl Gray, president, Union Pacific; George Otis Smith, director, U. S. Geological Survey; Dr. H. Foster Bain, secretary, American Institute of Mining and Metallurgical Engineers.
Operating Factors in Fuel Efficiency, by A. E. Warren, general manager, Central Region, Canadian National.
The Train Dispatchers' Relations to Fuel Economy, by E. E. Regan, general superintendent, N. Y., N. H. & H.
Fuel Economies in Long Locomotive Runs, by T. H. Williams, assistant general manager, Southern Pacific.
The Human Element in Fuel Efficiency, by H. S. Rauch, division superintendent motive power, N. Y. C.

WEDNESDAY, MAY 11

Address for the Coal Industry by Walter Barnum, president, National Coal Association.
Report of Committee on the Preparation of Coal and Fuel Oil, Malcolm MacFarlane (N. Y. C.), chairman.
Report of Committee on Fuel Accounting, Distribution and Statistics, B. A. McDowell (B. & O.), chairman.
Report of Committee on Storage of Coal and Fuel Oil, Glenn Warner (Pere Marquette), chairman.

THURSDAY, MAY 12

Addresses by L. K. Silcox, general superintendent motive power, C. M. & St. P., and chairman, Mechanical Division, American Railway Association, and F. S. Wilcoxon (Edna Brass Company), president, International Railway Supplymen's Association.
Report of Committee on Locomotive Economy Devices, George E. Murray (Grand Trunk Western), chairman.
Report of Committee on Stationary Power Plants, R. S. Twogood (Southern Pacific Co.), chairman.
Report of Committee on Firing Practice, J. M. Nicholson (A. T. & S. F.), chairman.

FRIDAY, MAY 13

Fuel Fundamentals, by N. D. Ballantine, assistant to the president, S. A. L.
Report of Committee on Diesel Locomotives, L. P. Michael (C. & N. W.), chairman.
Report of Committee on Fuel Stations, L. J. Joffray (Illinois Central), chairman; H. Morris (C. R. R. of N. J.), vice-chairman.
Report of Committee on Fuel Bulletins, F. E. Bast (D. & H.), chairman.

Report of Committee on Co-operation with American Railway Association, Eugene McAuliffe (Union Pacific), chairman.
Report on Representation at International Conference on Bituminous Coal, by W. L. Robinson (B. & O.).
Report of Committee on Co-operation with Railway Accounting Officers' Association, B. A. McDowell (B. & O.), chairman.
Report of Committee on Constitution and Bylaws, T. Duff Smith (Canadian National), chairman.
Report of secretary-treasurer.
Election of officers.

Railroad Legislation in New York

The legislature of New York, which has adjourned without day, passed a number of bills affecting highway crossings, but all of them are yet to be considered by the Governor, who has 30 days in which to take action. Following are the principal measures:

1. An amendment to the constitution, to be submitted to the people in November to provide that the expense of grade crossing elimination may be borne, outside of that paid by the railroad company, by the state and county or the state and city. Under the present law many small municipalities find the cost of elimination of crossings prohibitive, and will not take any action.

2. The two Webb bills, authorizing the city of New York to agree with the New York Central for the purchase, exchange or sell real property to provide for the elimination of grade crossings at Manhattanville (New York City) and for the construction of an elevated express highway.

3. Two amendments to the grade crossing law for New York City, one relating to property damages and the other to mapping out programs.

4. A general amendment to the grade crossing act (outside of New York City) providing for the filing with the superintendent of public works of a program of work, annually.

5. An amendment providing for changes in plans when desired by a municipal corporation.

6. A bill clarifying the language under which various officials authorize payments of money out of appropriations for grade crossing elimination.

7. A bill providing, among other things, that in carrying out grade crossing elimination work the superintendent of public works may provide for highway betterments, not essential to the elimination proper, the cost of such betterments to be defrayed out of any funds available for the improvement of highways.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION—T. L. Burton, 165 Broadway, New York City. Next meeting, May 24-27, 1927, Mayflower Hotel, Washington, D. C. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION—J. H. Aldworth, A. M. Byers Co., 410 Union Bank Bldg., Pittsburgh, Pa. Meets with Air Brake Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS—J. D. Gowin, 112 W. Adams St., Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS—E. L. Duncan, 332 S. Michigan Ave., Chicago. Next meeting, June 21-23, 1927, Mackinac Island, Mich.

- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.**—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Next annual meeting, November, 1927, Havana, Cuba.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.**—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Annual convention, June 21-24, 1927, San Francisco.
- AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.**—C. E. Bell, Seaboard Air Line, Washington, D. C. Next meeting, October, 1927, Chicago.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.**—J. W. Welsh, 292 Madison Ave., New York. Annual convention, Oct. 3-7, 1927, Cleveland Public Auditorium, Cleveland, Ohio.
- AMERICAN RAILROAD MASTER TINNERS' COPPER-SMITHS' AND PIPE FITTERS' ASSOCIATION.**—C. Bercherdt, 203 North Hamlin Ave., Chicago, Ill.
- AMERICAN RAILWAY ASSOCIATION.**—H. J. Forster, 30 Vesey St., New York, N. Y.
Division I.—Operations.—J. C. Caviston, 30 Vesey St., New York.
Freight Station Section (including former activities of American Association of Freight Agents).—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill. Annual convention, May 10-14, 1927, Memphis, Tenn.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., N. Y. Next meeting, May 16-17, Hotel Jefferson, Richmond, Va.
Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association).—J. C. Caviston, 30 Vesey St., New York. Next meeting, June 21-23, Hotel St. Francis, San Francisco, Calif.
Safety Section.—J. C. Caviston, 30 Vesey St., New York. Next meeting, April 19-21, New Palmer House, Chicago.
Telegraph and Telephone Section (including former activities of the Association of Railroad Telegraph Superintendents).—W. A. Fairbanks, 30 Vesey St., New York. Next meeting, Oct. 4-6, The Willard, Washington, D. C.
Division II.—Transportation (including former activities of the Association of Transportation and Car Accounting Officers).—G. W. Covert, 431 South Dearborn St., Chicago. Annual meeting, April 7, Ambassador Hotel, Atlantic City, N. J.
Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.
Division IV.—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Exhibit by National Railway Appliances Association.
Construction and Maintenance Section.—E. H. Fritch.
Electrical Section.—E. H. Fritch.
Signal Section (including former activities of the Railway Signal Association).—H. S. Balliet, 30 Vesey St., New York. Next meeting, Montreal, Que.
Division V.—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Annual meeting, June 7-10, 1927, Hotel Windsor, Montreal, Que. No exhibits at this meeting.
Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago. Annual convention, Sept. 13-15, 1927, Hotel Kentucky, Louisville, Ky.
Division VI.—Purchases and Stores (including former activities of the Railway Storekeepers' Association).—W. J. Farrell, 30 Vesey St., New York, N. Y. Next meeting, May 24-26, 1927, Palmer House, Chicago. No exhibits at this meeting.
Division VII.—Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago, Ill. Annual meeting, June 14-17, Quebec, Canada.
Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.
- AMERICAN RAILROAD BRIDGE AND BUILDING ASSOCIATION.**—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association. Annual convention, October 18-20, 1927, Hotel Nicolet, Minneapolis, Minn.
- AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.**—H. W. Byerly, General Immigration Agent, Northern Pacific, St. Paul, Minn. Annual meeting, June 8-10, 1927, Hotel Statler, Detroit, Mich.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.**—(Works in co-operation with the American Railroad Association Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliances Association.
- AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.**—Margaret T. Stevens, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, June 2 and 3, Hotel Roosevelt, New York.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.**—G. G. Macina, C. M. & St. P. Ry., 11402 Calumet Ave., Chicago. Annual convention, Aug. 31, Sept. 1 and 2, 1927, Hotel Sherman, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.
- AMERICAN SHORT LINE RAILROAD ASSOCIATION.**—T. F. Whittelsey, 1319-21 F St., N. W., Washington, D. C.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, Associate Mechanical Editor, *Railway Age*, 30 Church St., New York. Mid-west meeting, April 4-6, 1927, Kansas City, Mo. Spring meeting, May 23-26, 1927, White Sulphur Springs, W. Va.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.**—E. J. Stocking, 111 West Washington St., Chicago. Next annual convention, Jan. 24-26, 1928, Montreal, Que.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.**—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Annual convention, April 20, 1927, New Orleans, La.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.**—Jos. A. Andreucetti, C. & N. W., Room 413, C. & N. W. Station, Chicago. Annual meeting, Oct. 25-28, 1927, Hotel Sherman, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.
- ASSOCIATION OF RAILWAY EXECUTIVES.**—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.**—D. A. Hultgren, secretary, Massey Concrete Products Co., 1328 McCormick Bldg., Chicago. Annual exhibit at convention of American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.**—C. R. Crook, 129 Chilton St., Montreal, Que.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.**—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.
- CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.**—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.
- CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.**—R. E. Giger, 721 North 23rd St., East St. Louis, Ill. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.
- CENTRAL RAILWAY CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.**—(See Railway Car Department Officers' Association).
- CINCINNATI RAILWAY CLUB.**—D. R. Boyd, 811 Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.
- CLEVELAND STEAM RAILWAY CLUB.**—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, except July, August, September, Hotel Hollenden, Cleveland.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.**—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next convention, August 16-18, 1927, Hotel Lafayette, Buffalo, N. Y. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.
- INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.**—W. R. Walsh, Ewald Iron Co., Louisville, Ky.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.**—L. G. Plant, 80 E. Jackson Blvd., Chicago. Annual convention, May 10-13, 1927, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.
- INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.**—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Annual convention, September 6-9, 1927, Chicago.
- INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.**—W. J. Dickinson, 189 W. Madison St., Chicago. Meets with International Railway Fuel Association.
- MASTER BOILER MAKERS' ASSOCIATION.**—Harry D. Vought, 26 Cortlandt St., New York. Next annual convention, May 3-6, 1927, Hotel Sherman, Chicago.
- NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.**—E. A. Morse, vice-president, Potosi Tie & Lumber Co., St. Louis, Mo. Next annual convention, 1928, Hot Springs, Ark.
- NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.**—James B. Walker, 49 Lafayette St., New York. Annual meeting, October 17, 1927, Dallas, Tex.
- NATIONAL RAILWAY APPLIANCES ASSOCIATION.**—C. W. Kelly, 1014 South Michigan Ave., Chicago.
- NATIONAL SAFETY COUNCIL.**—Steam Railroad Section: J. E. Long, Superintendent Safety, D. & H., Albany, N. Y.
- NEW ENGLAND RAILROAD CLUB.**—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.
- NEW YORK RAILROAD CLUB.**—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3rd Friday in month, except June, July and August.
- PACIFIC RAILWAY CLUB.**—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2d Thursday in month, alternately in San Francisco and Oakland.
- RAILROAD MOTOR TRANSPORT CONFERENCE.**—R. H. Newcomb, 492 South Station, Boston, Mass.
- RAILWAY ACCOUNTING OFFICERS ASSOCIATION.**—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, June 7-10, 1927, Cosmopolitan Hotel, Denver, Colo.
- RAILWAY BUSINESS ASSOCIATION.**—Frank W. Naxon, 1406 Packard Bldg., Philadelphia, Pa.
- RAILWAY CAR DEPARTMENT OFFICERS' ASSOCIATION.**—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago. Annual convention, August 23-25, 1927, Hotel Sherman, Chicago. Supply Men's Association.—B. S. Johnson, W. H. Miner, Inc., 209 S. La Salle St., Chicago.
- RAILWAY CLUB OF PITTSBURGH.**—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.
- RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.**—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers, Oct. 25-28, Hotel Sherman, Chicago.
- RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.**—F. W. Venton, Crane Co., 836 S. Michigan Ave., Chicago. Meets with Traveling Engineers' Association, September, 1927.
- RAILWAY FIRE PROTECTION ASSOCIATION.**—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Annual meeting, October 11-13, 1927.
- RAILWAY REAL ESTATE ASSOCIATION.**—C. C. Marlor, 1243 Transportation Bldg., Chicago.
- RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.**—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, A. R. A. No exhibits in 1927.
- RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.**—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.
- RAILWAY TREASURY OFFICERS' ASSOCIATION.**—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, Sept. 1-3, 1927, Detroit, Mich.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.**—T. F. Donahoe, Gen. Supv. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual convention, September 20-22, 1927, Buffalo, N. Y. Exhibit by Track Supply Association.
- ST. LOUIS RAILWAY CLUB.**—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2nd Friday in month, except June, July and August.
- SIGNAL APPLIANCE ASSOCIATION.**—F. W. Edmunds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A., Signal Section.
- SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.**—Clyde Kimball, Inman Shops, Atlanta, Ga. Meets semi-annually.
- SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.**—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.
- SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.**—R. G. Parks, A. B. & A. Ry., Atlanta, Ga.
- TRACK SUPPLY ASSOCIATION.**—W. C. Kidd, Ramapo-Ajax Corporation, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association, September, 1927.
- TRAVELING ENGINEERS' ASSOCIATION.**—W. O. Thompson, Gen. Supt. R. S., New York Central, Buffalo, N. Y. Annual meeting, September, 1927, Hotel Sherman, Chicago. Exhibit by Railway Equipment Manufacturers' Association.
- WESTERN RAILWAY CLUB.**—Bruce V. Crandall, 189 West Madison St., Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

Traffic

The Ann Arbor christened its car ferry, the Wabash, at the dry docks of the Toledo Shipbuilding Company at Toledo, Ohio, on March 19.

The Duluth & Iron Range and the Duluth, Missabe & Northern, in conjunction with the University of Minnesota, will operate an agricultural car over the lines of the two railroads during April. As the car moves from point to point it is planned to present speakers who will make suggestions on the betterment of agriculture applicable to that locality.

The Yosemite Valley Railroad announces that, beginning June 1, sleeping cars will be run daily between El Portal, Cal., and Los Angeles and between El Portal and San Francisco, both over the Southern Pacific. Trains will arrive at El Portal at 6:45 a. m. and leave at 9 p. m. The regular daily train service over both these routes will be twice each way; starting from termini morning and evening.

The Minneapolis & St. Louis and the Minneapolis, St. Paul & Sault Ste. Marie have petitioned the Interstate Commerce Commission for a reargument before the entire commission and a reconsideration of the case in which the commission recently disapproved the proposed reduction of 6 cents per 100 lb. in the rates on grain and grain products from Minneapolis, St. Paul and Duluth, Minn., to eastern points.

The Boston Wool Trade Association has petitioned the Interstate Commerce Commission to re-open the wool rates investigation case in which the commission recently dismissed its complaint seeking the establishment of through routes and joint rates on wool in the grease via Pacific ports and the Panama canal to Boston and north Atlantic ports. The commission was divided in its view, 6 to 4, and the association now desires an opportunity to argue the case orally before the full commission.

At a meeting of the Traffic Club of Chicago on March 24, A. E. Clift, senior vice-president of the Illinois Central, was elected president for the ensuing year. Other officers elected were: M. H. Kennelly, president of Werner Brothers Fireproof Storage Company, first vice-president; Allen R. Gould, assistant freight and passenger traffic manager of the Chicago & North Western, second vice-president; J. P. Haynes, traffic director of the Chicago Association of Commerce, third vice-president; J. H. Howard, assistant comptroller of the Chicago, Milwaukee & St. Paul, treasurer. C. H. Caswell, general agent of the Chicago, Rock Island & Pacific; J. H. Mangold, general freight agent of the Elgin, Joliet & Eastern, and Murray N. Billings, assistant traffic manager of the Illinois Steel Company, were elected directors for the next two years.

The "Wichalouis"

The Missouri Pacific is now operating the "Wichalouis," its fast freight train between Wichita, Kan., and St. Louis, Mo., in two sections as a result of the increase in traffic which has been steady since the inauguration of the train on November 7.

Freight Traffic in January

Freight traffic handled by the Class I railroads in January was the greatest for that month ever reported, the Bureau of Railway Economics reports. It amounted to 39,223,400,000 net ton-miles, which exceeded by 1,516,772,000 net ton-miles, or four per cent, the best previous record for January, which was established in 1923. It also exceeded by 1,547,763,000 net ton-miles, or 4.1 per cent, that for January, 1926. In the Eastern district, there was an increase of 6.9 per cent in the amount of freight traffic handled in January, while the Southern district showed a decrease of 3.1 per cent. The Western district reported an increase of 3.2 per cent.

The average daily movement per freight car in January was 28.5 miles, the highest ever attained in January. This was an increase of nine-tenths of a mile over that for January, 1926, and 2.1 miles above that for January, 1925. It also was an increase of 5.7 miles above the average for January, 1920.

The average load per freight car in January, 1927, was 28.4 tons, the highest attained for that month since January, 1923, when the average was 29 tons.

Coal Production in Event of a Strike

A survey as to the possible bituminous coal production after April 1 in the event of a stoppage of mining in the union fields after that date has been made by the Car Service Division of the American Railway Association in connection with its problems of car distribution. The average weekly production of bituminous coal for the past four years of both union and non-union mines for the period from April 1 to September 30, amounted to 9,401,000 tons. This included 1926 when there was a heavy export movement due to the strike of British miners.

Bituminous coal actually produced by mines operated by non-union labor for the week ended December 4, 1926, amounted to 8,261,852 tons. During that week non-union mines having a car rating per week equal to 1,502,316 tons were not in operation. With those mines in operation, the potential production would be 9,764,168 tons, or a production of 363,168 tons in excess of the weekly average for the past four years. The survey of the Car Service Division shows that the car supply and transportation service will be wholly adequate to take care of any output that may be produced.

Twenty Per Cent Legislative Rate Reduction for Maritimes

Premier Mackenzie King, in a lengthy statement read to the Canadian Parliament, made known the proposals of the government to make effective the recommendations of the Duncan Commission on Maritime Claims appointed by the present government and which reported last September. Two or three matters of great importance to the Canadian railways are dealt with in the Prime Minister's statement, one of them being an announcement that at the present session of Parliament a bill would be introduced to provide for a reduction of 20 per cent in freight rates in the Maritime provinces and affecting largely the Canadian National.

The legislation will also provide for a change in the western terminus or boundary of the Atlantic region. It will be moved westward from Riviere du Loup to Diamond Junction and Levis (opposite Quebec City).

Dealing with another recommendation of the report calling for the vesting of fuller supervisory powers in the Dominion Railway Board the Prime Minister said the government could not act upon this as, if accepted, "it would bring about a radical change in the fundamental powers of the Railway Commission affecting the whole of Canada. It has no immediate bearing on the rights of the Maritime provinces any more than of other parts of Canada and is of such a character as to demand more mature consideration than has been possible up to this time. There is now before the Railway Commission the whole matter of flat percentage increases, known as horizontal increases, which the Duncan Commission recommends should be taken into fresh consideration by the Railway Commission."

At another point in the Duncan report is a recommendation that the federal government take over the St. John Valley Railway in New Brunswick, the railway which was the center of the controversy created by the challenging of the right of Senator Gould to take his seat in the United States Senate. On this question the Prime Minister said: "With respect to the Commission's recommendations concerning the possible acquisition of the St. John and Quebec railways and the Kent Northern Railway the government is of the opinion that the matters referred to are, in some particulars, incidental to the larger transportation problems of which mention is made in the report and to which the attention of Parliament will be invited at the present session, and that the situation with respect to these railways will in no wise be prejudiced if the course recommended by the Commission is permitted to await a knowledge of the probable effect of the adoption of such legislation as may be enacted with respect to Maritime railways generally."

In a statement on the Maritime freight rate reduction, proposed by the Canadian government to carry out a recommendation of the Duncan report, the Minister of Railways and Canals in the Parliament last week made it clear that the government would provide for consideration of the railways, other than the Canadian Na-

tional, to be affected by the proposed reduction. The resolution was given second reading and the bill based thereon introduced by the Minister. The other railways affected and which will be given consideration are: the Canadian Pacific; the St. John Valley; the Kent; the Inverness; the Quebec Northern; the Quebec & Oriental; the Quebec & Northwestern; and the Matane.

Before the end of the present year the Canadian National branch to complete the circuit around Lake St. John in northeastern Quebec and in the heart of the great industrial area being developed by the Aluminum Company and the paper concerns will be completed, according to a statement in the Quebec Legislature which is asked to vote financial aid for the project. Premier Taschereau introduced a resolution providing for the payment of \$567,000 by way of subsidy and as Quebec's share. The resolution was adopted.

Trans-Missouri-Kansas Shippers' Board

Reports rendered at the 17th regular meeting of the Trans-Missouri-Kansas Shippers' Advisory Board at St. Louis, Mo., on March 15, by all commodity sections and railroads set forth a favorable general business situation for the second quarter of 1927 and in some cases indicated an increase compared with the same period for 1926. In view of the success of the joint terminal grain committees established at the various primary markets throughout the territory of the board, it was decided to re-establish these committees again this year in expectation of increased grain shipments. All indications at the present time point to a favorable wheat crop and with the increased acreage sown this year it was felt that recognition should be given by the grain interests and the railroads to the increasing use of the "combine-thresher" machine. Attention was directed to the increased number of these machines within the state of Kansas alone, which played such an important role in the harvest last year. Reports of the United States Department of Agriculture, Bureau of Economics, co-operating with the Kansas State Board of Agriculture, indicated that there were 8,274 such machines operating in Kansas last season. Conservative estimates are that with a large crop this year there will be possibly 10,000 machines in use on the farms.

It was reported that an average of three or four months' coal supply will have been stored at large industrial plants by April 1, although retail coal dealers appeared to have been little interested in storing up coal during January and February. So far as could be determined there is no shortage of coal cars in this territory. Building operations appear to be developing normally as the spring season opens and it is anticipated that the year will develop into better than average conditions.

Consideration was given to the establishment of a committee to consist of representatives of the state agricultural colleges and agricultural departments of the railroads, to work out agricultural problems. The next meeting of the board will be held at Wichita, Kan., on June 15.

Equipment and Supplies

Erie to Spend 25 Millions

The Erie road and equipment budget for 1927, presented by President John J. Bernet to the Board of Directors and approved by them totals \$25,401,059, of which \$22,067,812, is chargeable to additions and betterments. The road work planned is to provide facilities for longer trains and heavier motive power which it is estimated will increase train lengths 20 per cent.

The following equipment is among that which is to be retired: 327 locomotives, 270 passenger cars, 4,765 freight cars, 915 tool cars, etc., 25 cabooses. The total book value of the equipment to be retired is \$8,400,101.

New equipment to be purchased includes: 50 heavy Mikado locomotives equipped with automatic stokers and feed water heaters, 30 switch engines, 25 all-steel suburban passenger coaches, four all-steel dining cars, 25 all-steel express cars and 25 cabooses. The total of new equipment comes to \$8,543,000.

The budget also provides for reconditioning much present equipment to increase its capacity and fuel efficiency. One hundred and fifteen of the road's present Mikado type locomotives are to be equipped with mechanical stokers and feed water heaters. Fifty locomotives are to be equipped for automatic train control.

The greater part of the expense involved in these additions and betterments will be met out of current operations. The budget also provides for miscellaneous retirements, replacements and improvements of structures along the road all of which will make for economy and increased efficiency.

The occasion is the first in which the Erie has formulated a budget for its road and equipment, and, it is announced, is the first of several steps President Bernet has under way for effecting economies and speeding the service of the railroad.

Locomotives

THE ERIE contemplates buying about 50 locomotives.

THE NEW YORK CENTRAL is inquiring for 30 passenger type locomotives and six heavy type eight-wheel switching locomotives.

THE SOUTHERN PACIFIC has ordered 10 three-cylinder, 4-10-2 type locomotives from the American Locomotive Company. These locomotives are to have 25 by 28-in. and 25 by 32-in. cylinders and a total weight in working order of 445,000 lb.

THE SOROCABANA RAILWAY (Brazil) has ordered 10 three-cylinder Mountain type locomotives from the American Locomotive Company. These locomotives are to have 18½ by 22-in. and 18½ by 24-in. cylinders and a total weight in working order of 199,000 lb.

Freight Cars

THE WESTERN ELECTRIC is inquiring for three composite gondola cars.

THE CHICAGO & ILLINOIS MIDLAND is inquiring for prices on repairing 240 gondola cars.

THE CLARENDON & PITTSFORD is inquiring for 10 flat cars of 50 tons' capacity.

THE UNION TANK CAR COMPANY is inquiring for from 250 to 500 tank cars of 8,000-gal. capacity.

THE CAMBRIA & INDIANA is inquiring for prices on the repair of 300 hopper cars of 50 tons' capacity.

THE UNION RAILROAD is having 670 hopper cars repaired at the shops of the Greenville Steel Car Company.

THE SUPER-POWER COMPANY, Chicago, has ordered four 30-yd. extension side dump cars from the Clark Car Company.

THE PACIFIC FRUIT EXPRESS has ordered 89 steel frame refrigerator cars from the Pacific Car & Foundry Company.

THE GENERAL ELECTRIC COMPANY has ordered 10 steel underframe flat car bodies from the American Car & Foundry Company.

THE DETROIT EDISON COMPANY has ordered four gondola cars of 50 tons' capacity from the Pressed Steel Car Company.

THE MID-CONTINENT PETROLEUM CORPORATION, Tulsa, Okla., has ordered eight tank cars of 8,000-gal. capacity with 40-ton trucks, from the American Car & Foundry Company.

THE STANDARD OIL COMPANY OF NEW JERSEY has ordered 10 all-steel box cars of 50 tons' capacity from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of March 12.

THE NEW YORK CENTRAL is inquiring for 1,000 box cars of 55 tons' capacity, 1,000 steel hopper cars of 70 tons' capacity, 1,000 steel gondola cars of 70 tons' capacity and 500 steel gondola cars of 55 tons' capacity.

THE SOUTHERN RAILWAY is inquiring for 10 all-steel air dump cars of 20-yd. capacity equipped with extension sides or aprons, also for 10 all-steel air dump cars of 30-yd. capacity equipped with extension sides or aprons.

THE CANADIAN NATIONAL, reported in the *Railway Age* of March 19 as having placed an order for underframes for 20 caboose cars, gave this order to the Pressed Steel Car Company. These cars are for service on the Grand Trunk Western and will be built in the railroad company's Port Huron shops.

Passenger Cars

THE NEW YORK, NEW HAVEN & HARTFORD has ordered six 73-ft. gas-electric rail motor cars from the J. G. Brill Company.

THE CERRO DE PASCO COPPER CORPORATION, New York, is inquiring for 1 first class coach, 1 second class coach, and 1 combination mail, baggage and second class coach.

THE WARASH has ordered two steel coaches from the American Car & Foundry Company. This is in addition to the orders reported in the *Railway Age* of March 26.

THE CENTRAL VERMONT has ordered two combination passenger and baggage gasoline-electric rail motor cars and one combination baggage and mail trailer car from the J. G. Brill Company.

THE CHICAGO, SPRINGFIELD & ST. LOUIS has ordered one combination passenger and baggage gasoline rail motor car and one combination baggage and mail trailer car from the J. G. Brill Company.

THE NEW YORK CENTRAL is inquiring for 121 passenger train cars including 22 coaches, 10 suburban cars, 10 steel motor passenger car bodies, 3 combination passenger and baggage cars, 5 combination mail and baggage cars, 30 baggage cars, 10 baggage-horse cars, 30 milk cars, and 1 steel motor baggage car body.

THE SOUTHERN PACIFIC has ordered twenty 72-ft. coaches, five 2-compartment 72-ft. coaches and five 72-ft. interurban coaches from the Standard Steel Car Company, and thirty 70-ft. baggage cars, five 70-ft. baggage and mail cars and five baggage horse cars from the Bethlehem Steel Company. Inquiry for this equipment was reported in the *Railway Age* of February 26.

Machinery and Tools

THE SOUTHERN RAILWAY is asking for bids until April 5 for five ditcher machines of standard design, with steel cab and with full equipment; also for alternate bids on ditchers as above except with additional drum and equipment for handling two-line bucket. Bids are also wanted April 7 for one steam shovel equipped with caterpillar tractor and 1 cu. yd. dipper.

Signaling

THE LEHIGH VALLEY has ordered from the General Railway Signal Company a mechanical interlocking for Tift Farm Junction (Buffalo), N. Y.; 28 levers.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company electro-mechanical interlocking apparatus for Colliers, W. Va., and Adams, Ind.

THE BALTIMORE & OHIO has ordered from the Union Switch & Signal Company, 62 color-position-light signals for use between Cumberland, Md., and Parkersburg, W. Va., and on the line west of Cincinnati.

Supply Trade

The Pittsburgh Testing Laboratory has removed its New York City office and laboratory from 50 Church street to 72 Washington street.

Henry M. Robinson, president of the First National Bank of Los Angeles, California, has been elected a director of the General Electric Company, Schenectady, N. Y.

Joshua A. Hatfield has been elected president of the American Bridge Company, with headquarters at New York, to succeed August Ziesing, retired. L. A. Paddock, president of the Canadian Bridge Company, Walkerville, Ont., has been elected a vice-president of the American Bridge Company, and Frank B. Thompson, auditor, has been elected a vice-president. Mr. Hatfield entered the employ of the Pottstown Iron Company, Pottstown, Pa.,



J. A. Hatfield

in 1880, where he remained for sixteen years, during the last five years of which he held the position of general sales agent. From 1896 until May, 1900, he was associated as an executive with the A. & P. Roberts Company, Pencoyd Iron Works, Philadelphia, and in 1900 was made assistant to the president of the American Bridge Company. Mr. Hatfield has been a director of the American Bridge Company from its formation in 1900 until the present time, and until 1914 was president of the American Bridge Company of New York, which was consolidated with the American Bridge Company of New Jersey, the present American Bridge Company. His election as president of the present American Bridge Company became effective on April 1.

H. A. Cronmiller has been appointed a representative of the O. M. Edwards Company, Inc., with headquarters at the New York office of the company, 412 Broadway, to succeed A. J. Horgan. Mr. Cronmiller has served for a number of years at the home office of the company, Syracuse, N. Y.

The Electric Storage Battery Company, Philadelphia, Pa., has opened a newly erected Philadelphia factory branch at 1955 Hunting Park avenue. The branch is under the management of W. C. Hooven.

J. H. Coyle, supervisor of engineering of the Billings & Spencer Company, Hartford, Conn., has been transferred, and is now in charge of sales engineering in New York, Pennsylvania and New England. Mr. Coyle's headquarters are at Hartford.

John F. Schurch, president of Manning, Maxwell & Moore, Inc., New York, has been elected chairman of the board; Charles A. Moore, Jr., vice-president, has been elected president to succeed Mr. Schurch; John D. Nicklis, manager of the supply department and director of purchases, has been elected a vice-president in addition to his former duties; all with headquarters at New York.

W. S. Hovey, vice-president and general manager of Fairbanks, Morse & Co., Chicago, has been elected president and general manager, succeeding C. H. Morse, who has been elected chairman of the board of directors; R. H. Morse, first vice-president, has been elected vice-chairman of the board of directors; W. E. Miller, vice-president and treasurer, has relinquished the duties of treasurer to replace Mr. Hovey as vice-president; F. M. Boughey, secretary and comptroller, has succeeded Mr. Miller as treasurer.

The scale business of the Fairbanks Company of New York has been acquired by purchase by Fairbanks, Morse & Co., Chicago. This transaction gives Fairbanks, Morse & Co. complete control of the manufacturing and distribution of Fairbanks scales, including a scale manufacturing plant at Birmingham, England, and a sales agency at London, England. The scale factories of E. and T. Fairbanks & Co., at St. Johnsbury, Vt., and East Moline, Ill., were purchased by Fairbanks Morse in 1916, but the Fairbanks Company, New York, retained the distributing rights for Fairbanks scales in the East and South and abroad.

G. N. Bull, formerly with the Worthington Pump & Machinery Company, with headquarters in Washington, D. C., has been made district manager of the New York office of the Lincoln Electric Company, Cleveland, Ohio. C. S. Freeman, formerly in charge of the Lancaster office, has been transferred to the Buffalo office and made district manager. S. W. Shultz, formerly of the Philadelphia office, has been put in charge of the Lancaster office. Ed. J. Pfister, formerly of the Buffalo office, has been transferred to the Philadelphia office.

C. H. Kadie has been appointed southeastern sales manager of the railroad division of the **Morton Manufacturing Company**, Chicago. Mr. Kadie's headquarters are at 630 Louisiana avenue, Washington, D. C. He succeeds Frank N. Grigg, Washington, D. C., who has retired on account of ill health. Mr. Grigg also represented the **Tuco Products Corporation**, New York, in the southeastern territory for the past 14 years and Mr. Kadie will in future represent also the **Tuco Products Corporation** assisted by Mr. Grigg's staff. Mr. Kadie also succeeds Mr. Grigg as representative of **Henry Giessel Company, Inc.**, Chicago.

The **Shepard Electric Crane & Hoist Company**, Montour Falls, N. Y., has taken over the entire **Sprague** portable hoist business of the **General Electric Company**. **Sprague** hoists have been built in the Bloomfield plant of the **General Electric Company** since 1903. The **Shepard Company** will continue the manufacture of this line and has established for this purpose a division known as the **Sprague Hoist division** of the **Shepard Electric Crane & Hoist Company**, with office at 30 Church street, New York City. **N. A. Hall**, who has served for fourteen years with the **General Electric Company**, will have charge of the new **Shepard** division.

David H. Moore, electrical engineer, and assistant to the secretary of the **Ohio Brass Company**, Mansfield, Ohio, since the fall of 1925, has been appointed district sales manager with headquarters at 50 Church street, New York City. He will handle steam railroad accounts in parts of New York, New Jersey, Pennsylvania and the New England States, having assumed his new duties March 21. Mr. Moore spent seven years with **Day & Zimmermann, Inc.**, Philadelphia, in consulting and general engineering work, before going to the **Ohio Brass Company**, and for eight years prior to that was connected with the **Schenectady** and **Pittsfield** works of the **General Electric Company**.

A new company has been formed under the name of the **Bailey Meter Company**, with factory and general office at Cleveland, Ohio. It has taken over the flow meter business and patents of the **General Electric Company** and the fluid meter and combustion control business and patents of the former **Bailey Meter Company**. Payment for the flow meter business and patents is to be made to the **General Electric Company** in stock of the new company, of which the other principal holder is the **Babcock & Wilcox Company**. The engineering, manufacturing and sales organizations of the old **Bailey Meter Company** will be retained by the new company. **E. G. Bailey**, president of the old **Bailey Meter Company**, is president of the new company. **R. S. Coffin**, vice-president of the old **Bailey Meter Company**, is vice-president in charge of administration and finances, and **R. E. Woolley**, of the **General Electric Company**, is

vice-president in charge of engineering and sales of the new company.

C. F. Hopkins has been appointed assistant to president of the **E. A. Lundy Company, Inc.**, Pittsburgh, Pa. He was born on April 30, 1882, and was educated in the public schools of Temple, Texas. He entered the service of the **Santa Fe Gulf Lines** in September, 1897, serving in various capacities from messenger boy to superintendent's chief clerk, until 1907, when he entered the service of the **St. Louis-San Francisco**, at Memphis, Tenn. He was consecutively appointed chief clerk to the general superintendent, trainmaster, chief clerk to the general manager and superintendent, serving in the latter capacity five years, until 1916. He then constructed the **Sapulpa & Oil Fields Railroad** in Oklahoma and as vice-president, operated same for one year. He subse-



C. F. Hopkins

quently was engaged in banking and the oil business in Oklahoma for several years, during which time he served one year as major in the **Railway Transportation Corps** of the **A. E. F.** in France. In 1922, he went to New York City and was engaged for three years in special work on railway and financial matters, and in 1925, engaged in the general railway supply business in western territory, with headquarters at Denver, Colo. In January of this year he was appointed western sales manager of **Burnot Fireproofing Products, Inc.**, of New York, and the **Oak Grove Handle Company** of Cameron, Wis.

Westinghouse Air Brake Company

Annual report for 1926 shows net earnings for year, after deducting all operating and general expense including depreciation of plants and equipment and after providing reserve for Federal and other taxes amounting to \$10,535,062, thus slightly exceeding the net for 1923 which was heretofore the best year in the company's history. Of this amount \$6,342,099 was distributed to the stockholders in dividends and \$4,192,963 was added to surplus account. Net earnings in 1925 were \$6,965,539.

H. H. Westinghouse, chairman, in his

remarks to stockholders says that "there was no extensive purchasing of rolling stock by the railroads of the country during the year under review, and consequently the sales of the **Air Brake** and **Locomotive Stoker** divisions of your company were not abnormally large; but, as in the previous year, the consolidated billing was materially increased by shipment of signal apparatus and automatic train control equipments manufactured by your subsidiary, the **Union Switch & Signal Company**."

American Brake Shoe & Foundry Company

Stockholders at a special meeting on April 22 will vote on recommendations on the part of directors for a four-for-one split up of the common stock. There are at present 156,928 common shares without par value outstanding of an authorized issue of 400,000. It is proposed to increase the authorized common shares to 1,000,000 and the four-for-one split up will increase the number of outstanding shares to 627,712. At the same time it is proposed to pay cash dividends at the rate of \$1.60 a share yearly on the increased stock, equivalent to \$4.00 on the present stock. In addition, subject to the approval of the plan, a stock dividend of 2 per cent on the new stock is to be allowed to subscribers payable June 30 and the directors express the hope that it will be possible, if earnings continue, to continue this 2 per cent stock dividend. The proposed 2 per cent stock dividend will increase the total stock outstanding to 640,266.

At the same time, it is also proposed to increase the price at which the 95,385 preferred shares may be redeemed from \$110 to \$125. Right to subscribe to future issues, if any, of preferred stock will be limited to holders of preferred while common stockholders will secure a similar right in regard to possible future issues of common. It is also provided that common stockholders who at present have no vote in the management will under the proposed amendments have the exclusive right to elect three of the fifteen members of the board of directors, the remaining twelve being elected by the preferred stockholders.

In the past four years the earnings of the **American Brake Shoe & Foundry Company** have averaged \$13.35 a share on the stock outstanding. The company has no funded debt.

General Electric Company

The annual report of the **General Electric Company** shows the year 1926 to have been the most prosperous in the history of the company.

Sales billed amounted to \$326,974,104, compared with \$290,290,166 in 1925, an increase of more than \$36,000,000. The best previous high record was in 1924, when sales totaled \$299,251,869.

Orders received during 1926 amounted to \$327,400,207, an increase of eight per cent over 1925. The previous high record was \$318,470,438 in 1920.

Profit available for dividends on the common stock on the 1926 business was

\$44,314,884, equivalent to \$6.14 per share on the 7,211,481 shares of no par value stock outstanding, as compared with \$20.49 per share in 1925 on the 1,802,870 shares of \$100 par value common stock then outstanding, which is equivalent to \$5.12 per share on the present stock. In August, 1926, four shares of no par value common stock were issued in exchange for each share of the old common stock.

This split-up of shares is reflected in an increase in the number of stockholders from 36,697 in December, 1925, to 46,305 in December, 1926. More than 98 per cent of the stock is held in the United States and nearly half of the stockholders are women.

Selected items from the income statement follow:

| | 1926 | 1925 |
|---|---------------|---------------|
| Net sales billed..... | \$326,974,104 | \$290,290,166 |
| Less: Cost of sales billed, including operating, maintenance and depreciation charges, reserves and provision for all taxes | 289,878,335 | 257,479,491 |
| Net income from sales | \$37,095,768 | \$32,810,675 |
| Income from other sources | 12,561,526 | 10,360,068 |
| Total income | \$49,657,294 | \$43,170,743 |
| Less: All interest payments and, in 1925, premium on debentures retired | 436,512 | 1,925,697 |
| Addition to general reserve | 2,548,284 | 2,603,829 |
| | \$2,984,796 | \$4,529,526 |
| Profit available for dividends | \$46,672,499 | \$38,641,217 |

Fairbanks, Morse & Co.

The annual report of Fairbanks, Morse & Co., Chicago, for the year 1926, shows a net profit after all charges of \$2,740,386 as compared with \$3,016,248 in the previous year. Assets amounted to \$37,744,624, compared with \$36,054,897 in 1925. Total current assets were \$24,647,928, investments \$98,454, and total fixed assets \$11,705,190. Total current liabilities were \$7,764,994, reserves for contingencies \$375,841, preferred stock \$7,338,925, common stock (368,977 shares) \$7,565,890. The net billings to customers for the 12 months amounted to \$31,550,384, compared with \$29,357,668 for 1925. The total orders received during the same period aggregated \$32,038,739, compared with \$31,668,778. The preferred stock and common stock dividends have absorbed \$1,621,908, leaving a balance of undivided profits for the year of \$1,118,478, which, added to the adjusted surplus at the end of 1925 brings the total surplus and undivided profits of the company and its subsidiaries at the close of the year to \$13,698,973. The net profit for the year after deducting preferred stock dividends, was equal to \$6.03 per share on the average amount of common capital stock outstanding during this period, as compared with \$6.74 per share earned in 1925. Since the close of the fiscal year the company has sold an issue of \$8,000,000 five per cent sinking fund 15-year-gold debentures, the proceeds of which will be used to repay bank loans, provide for the further development of certain branches of the business and furnish additional cash

working capital. The consolidated income and surplus account as of December 31, 1926, follows:

| | 1926 | 1925 |
|---|--------------|--------------|
| Operating profit for the year ending December 31, after deduction of manufacturing, selling and administrative expenses | \$4,387,227 | \$4,525,837 |
| Deduct: | | |
| Depreciation of buildings and equipment | 856,085 | 950,349 |
| Interest on bank loans | 248,685 | ..... |
| Contributions to the pension fund | 114,381 | 110,095 |
| Federal income tax for the year | 427,690 | 449,145 |
| | \$1,646,841 | \$1,509,589 |
| | \$2,740,386 | \$3,016,248 |
| Surplus and undivided profits at December 31, per last report..... | \$11,364,598 | \$10,242,453 |
| Surplus and undivided profits at December 31, on books of subsidiaries | 1,311,866 | 902,925 |
| | \$12,676,464 | \$11,145,378 |
| Deduct: | | |
| Premium paid on preferred stock retired.. | \$17,691 | ..... |
| Patents, good will, etc., written off on books of subsidiaries | 70,000 | ..... |
| Sundry adjustments to surplus on books of subsidiaries | 8,278 | ..... |
| | \$95,969 | ..... |
| | \$12,580,495 | ..... |
| | \$15,320,881 | \$14,161,626 |
| Dividends for the year: | | |
| On 7 per cent preferred stock | \$515,426 | \$526,825 |
| On common stock.... | 1,106,482 | 958,337 |
| | \$1,621,908 | \$1,485,162 |
| Balance, December 31. | \$13,698,973 | \$12,676,464 |

Trade Publications

TRACK LINING INSTRUCTION.—The Hackmann Railway Supply Company, Chicago, has prepared a chart 22 in. by 28 in., suitable for posting in a tool house, which shows by diagrams, photographs and printed instructions how track liners should be used in lining double-slip switches and turnouts, as well as swings and kinks in track. Specific directions are also given for the placing of the liners in each operation, whether the work is done by three, four or five men.

THE CAL BOOK.—The North American Cement Corporation, Hagerstown, Md., has issued a 32-page booklet devoted to its product, Cal, which is defined as oxychloride of calcium and is offered as an admixture to Portland cement concrete. The text outlines in turn the properties of this material, its effect as an accelerator in the setting of concrete, the manner in which it results in increased strength, particularly early strength, and its use in cold weather as a means of reducing the tendency of concrete to freeze. Instructions are also given for the use of this material to obtain the various effects desired. In addition to charts showing the results of tests, a considerable number of photographs are given of structures in which this material has been used.

Construction

CANADIAN NATIONAL.—A contract for the construction of a 300-ton reinforced concrete coaling station at Belleville, Ont., has been awarded to the Canadian Engineering & Contracting Company, Hamilton, Ont.

CANADIAN NATIONAL.—A railway construction program suggested by the management and board of directors of the Canadian National will be submitted to the Dominion Parliament, according to an announcement by the Minister of Railways and Canals. The recommendations are divided into three groups: (a) Lines which offer economic and operating advantages to the system; (b) branches for the purpose of general development and colonization of the country, which will constitute feeders to the system; and (c) a branch which will link the Hudson Bay Railway with the south lines of the Canadian National system. The cost of the new lines, which are scheduled to be completed by August 31, 1930, is estimated at \$19,120,000.

CANADIAN PACIFIC.—Bids have closed for the construction of a brick and stucco combined freight and passenger station at Trail, B. C.

CHICAGO & NORTH WESTERN.—A contract has been let to Anton J. Ebert, Argonne, Wis., for the construction of a combined freight and passenger station at Land O' Lakes, Wis.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—A contract for the construction of a brick and structural steel locomotive repair shop at Lafayette, Ind., has been let to A. E. Kemmerer, Lafayette. The shop, which is expected to cost about \$275,000, will contain 15 locomotive pits, two 15-ton cranes, and one 210-ton bridge crane.

DELAWARE, LACKAWANNA & WESTERN.—A contract has been awarded to the Arthur McMullen Co. of New York City, and the Stange Construction Co. of Philadelphia, Pa., for the construction of third and fourth tracks from Boonton, N. J., to East Dover, to cost about \$3,000,000. Plans are also being made for the remodeling and enlargement of the lunch room in the Hoboken Terminal at Hoboken, N. J., at a cost of about \$50,000.

DENVER & RIO GRANDE WESTERN.—A contract has been awarded to the Utah Construction Company, for revision of the line between Mack, Colo., and Westwater, Utah, 16 miles, at an approximate cost of \$539,000. Another contract has been awarded to the Platt, Rogers Construction Company, covering the revision of line between Parkdale, Colo., and Cleora, 42 miles, at a cost of about \$750,000. Bids have been requested by this company for line revisions between Minturn, Colo., and Eagle, 26 miles, between Brown Canon, Colo., and Buena Vista, three miles and in the vicinity of Husted, Colo., two miles.

ELGIN, JOLIET & EASTERN.—A contract for the construction of a one-story brick and concrete dormitory at South Chicago, Ill., has been awarded G. A. Johnson & Sons, Chicago, at a cost of about \$25,000.

GEORGIA & FLORIDA.—This road has let a contract for the construction of a 57-mile extension from Augusta, Ga., to Greenwood, S. C., at which point a connection will be made with the Southern Railway, Seaboard Air Railway and the Piedmont & Northern Railway, which will give an outlet from the east to the middle west.

LOUISIANA RAILWAY & NAVIGATION COMPANY OF TEXAS.—R. R. Farmer, vice-president, has announced the plans of this company for the extension of its line from McKinney, Tex., west to some point on the line of the St. Louis-San Francisco—either Celina, Tex., Frisco or Prosper—about 10 miles. Further plans call for extension beyond the St. L.-S. F. to Decatur, Tex., to a connection with the Ft. Worth & Denver City, about 45 miles. It is also planned to rebuild the line between Greenville, Tex., and McKinney, 32 miles.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—This company has applied to the Interstate Commerce Commission for authority for the construction of a spur track leading from the main line of its Sequatchie Valley branch, in Tennessee, in a westerly direction approximately 5,431 feet, for the purpose of developing coal lands belonging to the Whitwell Coal Corporation.

NEW YORK CENTRAL.—A contract has been let to the Arthur McMullen Company, New York, for construction in connection with the West Side improvement at New York, to cost approximately \$30,000.

NEW YORK CENTRAL.—The Public Service Commission of New York has ordered the elimination of the highway grade crossing at County highway No. 677 in Carman, N. Y., and has directed the railroad company to prepare plans and specifications; estimated cost \$214,000. A five-span through plate girder bridge to be built over the railroad will be about 255 ft. long.

NORTHERN PACIFIC.—This company plans the reconstruction of the bridge over the Rattlesnake river, near Missoula, Mont., at an approximate cost of \$36,000.

PIEDMONT & NORTHERN.—This company has applied to the Interstate Commerce Commission for authority for the construction of a line from Spartanburg, S. C., to Gastonia, N. C., 53 miles, and a line from Charlotte, N. C., to Winston-Salem, N. C., 75 miles.

PENNSYLVANIA.—A contract has been let to the Newhall Co. of Cleveland, Ohio, for the renewal of wooden piles and dock superstructure at Cleveland, O., which is estimated will cost around \$41,000. Another contract has been awarded to the Dunbar & Sullivan Dredging Co. of Detroit, Mich., for the dredging of an ore slip at Erie, Pa., which, it is estimated, will cost about \$72,000.

QUANAH, ACME & PACIFIC.—Bids will close on April 7 for the construction of

an extension between McBain, Tex., and Floydada, 27 miles.

RICHMOND, FREDERICKSBURG & POTOMAC.—This company is planning to make an extension of the Northward Pass track "WH" tower northward to Hazel Run, near Fredericksburg, Va., which is estimated will cost around \$47,500. Plans are also being made for the change of alignment and the construction of a double-track bridge at Powells Creek, which is between Fredericksburg and Alexandria, about four miles north of Quantico, which is estimated will cost around \$750,000. Bids will be taken on grading and bridge construction track-work by company forces. This company has purchased 5,000 tons of rails from the Bethlehem Steel Co., which will be laid this year, and a part of which have been rolled at the Sparrows Point Mill. During this year a change will be made of semaphore signals to color light signal of the automatic signal system between "NA" tower at Richmond and Doswell, Va., about 21 miles. The section of the line between Doswell and "AF" block station, about 80 miles, was changed from semaphore to color light signals during 1926.

SAN ANTONIO & NORTHWESTERN.—This company has filed a charter in Texas for the construction of a line between San Antonio, Tex., and San Angelo, 234 miles. Intention of applying to the Interstate Commerce Commission for authority to proceed with construction has been announced.

SOUTHERN PACIFIC.—A contract has been let to the Ware Company, El Paso, Tex., for the construction of a Spanish type hollow tile and stucco passenger station at McAllen, Tex., to cost approximately \$37,000.

SOUTHERN PACIFIC.—Plans are being prepared for the construction of combined freight and passenger stations of the Spanish Renaissance style at Azahar, Tex., La Blanca, Elsa, Las Velia, Santa Rosa and Primera, on the new line between Edinburg and Harlingen, and at Encano, Rachel, Dix, Linn, Solino and Alsonia, on the new line between Falfurrias, Tex., and Edinburg.

TEXAS & PACIFIC.—Plans are being prepared for the construction of a brick passenger station at Odessa, Tex., which it is estimated will probably cost approximately \$100,000.

VIRGINIAN.—This road has let a contract for the superstructure of the bridge at mile posts 90.9 and 52.7 to the Virginian Bridge and Iron Company and a contract for the substructure to W. W. Boxley & Company.

THE INTERSTATE COMMERCE COMMISSION has issued a decision holding that the railroads have failed to justify a proposed readjustment of rates on grain and grain products from Birmingham, Ala., and Chattanooga and Knoxville, Tenn., to south Atlantic ports and certain intermediate destinations.

Financial

CANADIAN NATIONAL.—1926 Earnings.—Annual report for 1926 shows a net income deficit after interest and other fixed charges, including interest on Dominion Government advances, of \$29,894,073, as compared with a deficit of \$42,197,665 in 1925. Selected items from the income statement follow:

| Canadian National | | |
|------------------------------------|---------------|---------------|
| | 1926 | 1925 |
| Average mileage operated | 22,549 | 22,420 |
| Railway operating revenues | \$275,570,310 | \$253,708,774 |
| Maintenance of way | \$48,536,503 | \$44,753,310 |
| Maintenance of equipment | 51,211,821 | 49,324,910 |
| Transportation | 111,393,758 | 110,386,975 |
| Total operating expenses | \$227,345,281 | \$220,265,476 |
| Operating ratio | 82.50 | 86.82 |
| Net revenue from operations | \$48,225,030 | \$33,443,298 |
| Railway tax accruals | 5,281,818 | 4,465,378 |
| Railway operating income | \$42,892,324 | \$28,918,129 |
| Net revenue from misc. operations | 17,235 | —30,388 |
| Taxes on misc. operations | 66,212 | 73,487 |
| Total operating income | \$42,843,846 | \$28,814,253 |
| Non-operating income | 7,622,827 | 7,695,228 |
| Gross income | \$50,466,674 | \$36,509,481 |
| Hire of freight cars | — | — |
| Dr. bal. | 3,947,606 | 1,861,208 |
| Interest on funded debt | 39,701,896 | 40,966,559 |
| Int. on Dom. Gov't advances | 32,090,454 | 31,450,382 |
| Total deductions from gross income | \$80,360,747 | \$78,707,146 |
| Net income deficit | \$29,894,073 | \$42,197,665 |

CHESAPEAKE & OHIO.—Control Authorized.—The Interstate Commerce Commission has authorized the acquisition of control by purchase of capital stock and by lease of the Sewell Valley and the Loop & Lookout. The Sewell Valley extends from a connection with C. & O. at Meadow Creek, West Va., to G. & E. Junction, 21 miles with a branch from the latter to Glencoe, 11.25 miles, a total of 32.28 miles. Construction of a branch line to Duo, 12 miles, has been authorized. The Loop & Lookout extends from a point near G. & E. Junction to Nallen, 18.97 miles. The stock of the two companies was purchased from T. W. Raine. The application also asked approval of acquisition of the Greenbrier & Eastern but action on this part of the application was deferred.

Commissioner Eastman dissented.

Purchase of Greenbrier & Eastern Stock Criticized by I. C. C. Examiner.—The Interstate Commerce Commission has made public a supplemental report proposed by Examiner Thomas F. Sullivan following the investigation instituted by the commission into the purchase of stock of the Greenbrier & Eastern by the Union Trust Company, of Cleveland, for account of the Chesapeake & Ohio. He recommends a finding by the commission that the acquisition of control of the road, an 11-mile coal line in West Virginia, by the C. & O., would be in the public interest, but that the C. & O., would not be justified in paying more than \$125 per share

for the 10,000 shares of the stock of the G. & E., and that the order provide that the C. & O., be restricted to that price.

The Union Trust Company had purchased the stock, largely through Andrew B. Crichton, of Johnstown, Pa., who had been elected president of the G. & E., for \$140.91 per share, after he had acquired various amounts of the stock from others at less prices, and after some of the minority holders had attempted to sell their stock direct at lower prices. The report says the price "appears excessive" and criticises the attitude of the C. & O., officials in dealing secretly with Crichton while refusing to the parties claiming title to a portion of the stock access to the contracts entered into for the purchase of that stock. It also refers to "the disposition utterly to disregard the rights of minority stockholders" as evidenced by a contract by which the C. & O., agreed to turn over to Crichton the net current assets of the Greenbrier upon delivery by him of 8,128 shares of stock.

Earlier in the year, it is stated, President W. J. Harahan of the C. & O., had refused to consider the purchase of the stock at \$125 per share. The report includes a detail record of letters, telegrams, telephone messages, conferences and conversations from O. P. Van Sweringen and his subordinates and representatives of the bank and the two railroads involved relating to the purchase, and criticises evidence introduced by the C. & O., at the hearing showing the estimated cost of reproduction of the G. & E. property as \$1,023,000. The C. & O., filed with the commission after the investigation was ordered an application for authority to acquire the stock which the Union Trust Company had purchased with funds provided by it. The examiner suggests that "possibly an investigation by the proper bureau of the commission to determine whether the C. & O., is in fact controlling and or operating the Greenbrier may be in order."

DELAWARE, LACKAWANNA & WESTERN.—Distribution to Stockholders.—Further details of the Lackawanna's proposal to distribute to its stockholders \$92,600,000 par value of bonds at present held in the company's treasury are given in a statement made public by W. S. Jenney, vice-president and general counsel, which said:

"It is possible the Interstate Commerce Commission will ask a hearing on the transfer of these securities to the Lackawanna Securities Company from the Delaware, Lackawanna & Western Railroad treasury, although it is not actually necessary under the laws governing the transfer of such securities. But it is our opinion the commission will ask for the hearing in order to ask us certain questions as to the railroad's financial position, the values represented by the securities and the status of the Lackawanna's surplus, and possibly to explain the reasons for forming such a company."

The Lackawanna proposes to effect the distribution of the \$92,600,000 of bonds by the formation of a new company to be known as the Lackawanna Securities Company. This company will be chartered in Delaware. It will issue 844,411 shares without par value which will be distributed to Delaware, Lackawanna & Western stockholders in the ratio of one share of new stock to two shares of railroad stock. The bonds include the following:

Morris & Essex first 3½'s of 2000... \$9,871,000
Glen Alden Coal Co. 4's..... 58,500,000
Morris & Essex construction mortgage 5's of 1955..... 10,000,000
New York, Lackawanna & Western first and refunding 5's of 1973, series A..... 13,635,000

One of the important reasons for securing Interstate Commerce Commission approval is that when the commission authorized the latter two issues, in 1925 and 1922, respectively, it added a provision that the bonds should not be disposed of by the Lackawanna except upon further order of the commission.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—Annual Report.—Annual report for 1926 shows net income after interest and other charges of \$1,689,640, equivalent after dividends on the preferred stock to \$14.19 a share on the common, this being the same as the preliminary statement reported in the *Railway Age* of February 12. Net income in 1925 was \$1,620,749 or \$13.53 a share.

Selected items from the income statement follow:

| Chicago, Indianapolis & Louisville | | |
|---|--------------|--------------|
| | 1926 | 1925 |
| Average mileage operated | 648 | 650 |
| RAILWAY OPERATING REVENUES | \$18,598,066 | \$17,686,040 |
| Maintenance of way | 1,799,734 | 1,841,716 |
| Maintenance of equipment | 3,867,302 | 3,766,046 |
| Transportation | 6,621,311 | 6,267,011 |
| TOTAL OPERATING EXPENSES | 13,327,121 | 12,869,194 |
| NET REVENUE FROM OPERATIONS | 5,270,945 | 4,816,846 |
| Railway tax accruals | 1,055,470 | 895,069 |
| Railway operating income | 4,212,721 | 3,920,362 |
| Equipment, rents, net dr. | 546,920 | 612,842 |
| Joint facility rents, net dr. | 686,661 | 463,998 |
| NET RAILWAY OPERATING INCOME | 1,233,581 | 1,076,839 |
| Non-operating income | 118,489 | 128,737 |
| GROSS INCOME | 3,097,628 | 2,972,259 |
| Rent for leased roads | 40,826 | 39,951 |
| Interest on funded debt | 1,350,266 | 1,300,691 |
| TOTAL DEDUCTIONS FROM GROSS INCOME | 1,407,989 | 1,351,510 |
| NET INCOME | 1,689,640 | 1,620,750 |
| Disposition of net income | | |
| Divs. on pref. stock, 4 per cent | 199,652 | 199,652 |
| Divs. on com. stock, 7 per cent in 1926, 5 per cent in 1925 | 734,790 | 524,850 |
| Surplus for year carried to profit and loss | 755,198 | 896,248 |

DENVER & RIO GRANDE WESTERN.—Acquisition.—This company has applied to the Interstate Commerce Commission for authority for the acquisition of control of the Goshen Valley, not involving consolidation, by the purchase of all its capital stock.

DENVER & RIO GRANDE WESTERN.—Preferred Bond Interest.—Directors at their meeting in New York on March 29, took no action relative to the payment of interest on the general mortgage 5 per cent bonds. Interest on this issue is cumulative from February 1, 1924, but is to be paid only at the discretion of the directors. It becomes a fixed charge after February 1, 1929.

FAIRPORT, PAINESVILLE & EASTERN.—Securities.—This company has applied to the Interstate Commerce Commission for authority to execute a first mortgage on all its property in the amount of

\$3,000,000, and to issue presently \$800,000 of first mortgage 6 per cent bonds thereunder, to be sold at not less than 94, for the purpose of paying off certain notes and for the construction of an extension from Painesville to Madison, Ohio. The company also asks authority to issue \$250,000 of common stock at par.

GULF, COLORADO & SANTA FE.—Lease.—The Interstate Commerce Commission has authorized a new lease for ten years from January 1, 1927, of the Gulf, Beaumont & Great Northern, Roganville, Texas to Center, 77.78 miles.

LEWISTOWN & YOUNGSTOWN FRONTIER.—Abandonment.—The Interstate Commerce Commission has dismissed an application of this company to abandon 2 miles of its line in Niagara County, N. Y., on the ground that the company is an interurban railway.

LOS ANGELES & SALT LAKE.—Extension.—The Interstate Commerce Commission has authorized this company to operate 1.7 miles of trackage extending from its yard tracks at Provo, Utah, to the plant of the Columbia Steel Company which was considered as an extension as contemplated in paragraph 18 of section 1 of the Interstate Commerce Act.

NEW YORK, NEW HAVEN & HARTFORD.—Annual Report.—Annual report for 1926 includes a statement of the road's earnings, inclusive of the Central New England and the Harlem River & Portchester, merger of which into the present company has recently been authorized by the Interstate Commerce Commission. The combined statement shows net income after interest and other charges of \$8,852,074 equivalent to \$5.63 a share on the common stock as compared with \$8,311,615 or \$5.29 a share in 1925.

The income statement of the company proper was reproduced in part in the *Railway Age* of March 12, page 898, and showed net income of \$8,243,112 or \$5.25 a share on the stock.

NEW YORK, ONTARIO & WESTERN.—1926 Earnings.—Preliminary statement of earnings for 1926 shows net income after interest and other charges of \$775,128, equivalent to \$1.33 a share on the common stock. Net income in 1925 was \$41,066 or 7 cents a share.

NORFOLK & WESTERN.—Annual Report.—Report for 1926, excerpts from which appear on adjoining pages, shows net income after interest and other charges of \$36,867,506 equivalent after dividends on the preferred stock to \$25.75 per share on the common stock. Net income in 1925 was \$26,564,758 or \$18.67 a share.

NORTHERN PACIFIC.—Abandonment.—The Interstate Commerce Commission has made public a report proposed by Examiner M. S. Jameson recommending a finding by the commission that the present and future public convenience and necessity permit the abandonment of the Boulder-Elkhorn branch in Jefferson county,

(Continued on page 1099)

Annual Reports

Thirty-First Annual Report of the Norfolk and Western Railway Company

ROANOKE, VA., March 22nd, 1927.

To the Stockholders of the Norfolk and Western Railway Company:

Your Board of Directors submits the following report for the year ending December 31st, 1926.

Mileage of Road and Track in Operation

| | DECEMBER 31ST, 1926 Miles | DECEMBER 31ST, 1925 Miles | INCREASE Miles |
|--|------------------------------|------------------------------|-------------------|
| Main Line | 1,542.69 | 1,542.69 | .... |
| Branches { Operated as second track | 127.28 | 127.28 | .... |
| Other branches | 533.64 | 533.64 | .... |
| Total miles | 2,203.61 | 2,203.61 | .... |
| Lines operated under lease | 22.27 | 22.27 | .... |
| Lines operated under trackage rights | 15.60 | 15.60 | .... |
| Total miles of road in operation | 2,241.48 | 2,241.48 | .... |
| Second track | 620.76 | 617.11 | 3.65 |
| Third track | 13.58 | 13.58 | .... |
| Sidings and yard tracks | 1,567.51 | 1,557.16 | 10.35 |
| Total miles of all tracks in operation | 4,443.33 | 4,429.33 | 14.00 |
| Average miles of road operated | 2,241.48 | 2,240.96 | .52 |
| Average miles of track operated | 4,434.90 | 4,400.77 | 34.13 |

Capital Stock

The aggregate amounts of Adjustment Preferred and Common capital stock authorized and issued, including 77 shares (\$7,700) of Adjustment Preferred stock and 24 shares (\$2,400) of Common stock held in the Company's treasury, were as follows:

| | AUTHORIZED | ISSUED PAR VALUE | SHARES |
|-----------------------------------|---------------|---------------------|-----------|
| Adjustment Preferred Stock | \$23,000,000 | \$23,000,000 | 230,000 |
| Common Stock | 250,000,000 | 139,572,700 | 1,395,727 |
| Totals, December 31st, 1926 | \$273,000,000 | \$162,572,700 | 1,625,727 |
| Totals, December 31st, 1925 | 273,000,000 | 160,321,700 | 1,603,217 |
| Increase (all Common Stock) | | \$2,251,000 | 22,510 |

Funded Debt

The aggregate Funded Debt actually outstanding was as follows:

| | Dec. 31st, 1926 | Dec. 31st, 1925 | Increase or Decrease |
|---|--------------------|--------------------|-------------------------|
| Mortgage Bonds | \$95,288,500 | \$89,288,500 | Inc. \$6,000,000 |
| Convertible Bonds (\$441,000 not now convertible) | 1,594,300 | 3,840,300 | Dec. 2,246,000 |
| Equipment Trust Obligations | 23,185,000 | 26,380,000 | Dec. 3,195,000 |
| | \$120,067,800 | \$119,508,800 | Inc. \$559,000 |

Road and Equipment

The charges to investment in road and equipment during the year, were \$16,045,620.31.

The total investment in road, equipment and miscellaneous physical property on December 31st, 1926, was \$405,148,833.20, of which \$44,281,951.70 was provided by appropriations from income and surplus. In addition \$10,892,220.69 was provided by direct charges to income prior to July 1st, 1907.

During the year 3.65 miles of double tracking on Big Sandy Line were completed.

New equipment received and equipment rebuilt during the year were as follows:

- 10 freight locomotives (steam).
- 3 switching locomotives (steam), rebuilt as saddle-tank locomotives.
- 18 all-steel passenger cars.
- 15 all-steel baggage and express cars.
- 250 steel underframe flat cars, 115,000 lbs. capacity.
- 229 maintenance of way camp cars (built with used material).
- 1 locomotive crane.
- 1 rail and tie unloader.
- 1 scale repair car.

- 1 oil sprayer car (built with used material).
- 4 automobile trucks.

Of this equipment, 10 freight locomotives (steam), 3 switching locomotives (steam), rebuilt as saddle-tank locomotives, 250 flat cars, 115,000 lbs. capacity, 229 maintenance of way camp cars, 1 scale repair car and 1 oil sprayer car were built at your Roanoke Shops.

Additions and Betterments to Way and Structures

168.61 miles of track were laid with 130-lb. rail, making a total of 746.18 miles of track now laid with this weight of rail.

408,008 cubic yards of stone and 31,793 cubic yards of prepared slag were used in standard ballasting on the main line.

Passing sidings were extended as follows: 3,630 feet on the Norfolk Division, 24,088 feet on the Shenandoah Division, 3,862 feet on the Pocahontas Division and 1,472 feet on the Scioto Division.

A two-story brick passenger station was constructed at Norton, Va. The brick passenger station and frame express building at Williamson, W. Va., were moved and reconstructed. An extension was made to the brick freight station at Winston-Salem, N. C.

The new freight classification yard at Williamson, W. Va., commenced in 1925, is now well under way. A motive-power office building, roundhouse foreman's office, roundhouse, electric welding and repair shop, crane runway, storehouses and an extension to Y. M. C. A. building have been constructed in connection with this yard. The enlarged freight classification yard at Portsmouth, Ohio, also commenced in 1925, is nearing completion. A 130-foot roundhouse and extension to present roundhouse, office buildings, shops, storehouses, a complete water supply for locomotives, a 2,000-ton coaling station and ice house were completed.

Track scales were installed as follows: One each of 200 tons capacity at Island and Richlands, Va., and one of 150 tons capacity at Bluestone Power House, W. Va., replacing 100-ton scales. A 200-ton scale was moved and reconstructed at Williamson, W. Va.

A water softening plant of 125,000 gallons per hour capacity was constructed at Roanoke, Va.

Steel water tanks for treated water were erected as follows: One of 400,000 gallons capacity at Roanoke, Va., one each of 200,000 gallons capacity at Phoebe, Va., and Columbus, Ohio, and one each of 100,000 gallons capacity at North Fork, W. Va., Sardinia and Renick, Ohio. Service tanks of 50,000 gallons capacity were erected at Creek Junction, Va., Tuckerdale, N. C., Kenova, W. Va., and Ironton, Ohio.

A storage dam, having a capacity of 10 million gallons of water, was completed at Phoebe, Va.

An electric centrifugal pump, with capacity of 1,000 gallons per minute, was installed at Williamson, W. Va.

Automatic signals have been installed between Vera and Clare, Ohio, and on Bluestone Branch between Cooper and Clift, W. Va., and are in process of installation between Roanoke, Va., and Winston-Salem, N. C.

Concrete overhead highway bridges were constructed at Price and Roxboro, N. C.; a timber overhead bridge at Elliston, Va., was replaced by steel overhead highway bridge at a new location.

Thirteen grade crossings were eliminated during the year, three by construction of overhead bridges and ten by changes in road.

13.51 miles of fencing were built.

497 lineal feet of light steel bridges were replaced with fit steel doubled.

47 lineal feet of steel bridges were converted into rail top culverts and ballast deck.

838 lineal feet of light steel bridges were replaced by new standard steel structures.

49 lineal feet of steel bridges were converted into concrete beam deck with ballast floors.

Electrification

Construction of foundations for overhead catenary structures in anticipation of future extension of electrification from Iaeger to Williamson, W. Va., was completed.

Cross-country high-tension transmission lines between Bluestone and Welch, W. Va., for the Iaeger to Williamson electri-

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fication, and between Bluestone and Matoaka, W. Va., for interchange of electric current with the Virginian Railway, were completed, together with new substations at Bluestone, Welch and Matoaka, W. Va. Substations at Maybeury and North Fork, W. Va., were extended.

Automatic Train Control

Automatic train control between Roanoke and Shenandoah, Va., a distance of 132 miles, including automatic signals, wayside train control apparatus, transmission line and engines operating with train control device, was completed and placed in operation

January 1st, 1927. Automatic train control has now been installed on the entire Shenandoah Division of your Company's line, extending from Roanoke, Va., to Hagerstown, Md., a distance of 239 miles.

Operating Results

The year 1926 was one of unusual prosperity for your Company, the prolonged coal strike in Great Britain being an important factor in record shipments of coal and record earnings. Operating Revenues were \$120,409,038.37, a gain of \$15,190,047.38, or 14.44 per cent, over 1925. Freight Revenues increased \$15,-

Income Statement

| | 1926 | 1925 | INCREASE OR DECREASE | PER CENT. |
|---|------------------------|------------------------|-----------------------------|--------------|
| OPERATING INCOME: | | | | |
| Operating Revenues: | | | | |
| Freight | \$108,703,462.59 | \$93,370,356.89 | Inc. \$15,333,105.70 | 16.42 |
| Passenger | 7,663,493.63 | 8,031,228.95 | Dec. 367,735.32 | 4.58 |
| Mail | 1,120,521.12 | 1,149,651.55 | Dec. 29,130.43 | 2.53 |
| Express | 1,067,486.65 | 1,101,736.16 | Dec. 34,249.51 | 3.11 |
| All Other Transportation | 539,244.86 | 562,353.83 | Dec. 23,108.97 | 4.11 |
| Incidental and Joint Facility Revenue | 1,314,829.52 | 1,003,663.61 | Inc. 311,165.91 | 31.00 |
| Totals | \$120,409,038.37 | \$105,218,990.99 | Inc. \$15,190,047.38 | 14.44 |
| Operating Expenses: | | | | |
| Maintenance of Way and Structures | \$16,413,152.12 | \$15,109,848.31 | Inc. \$1,303,303.81 | 8.63 |
| Maintenance of Equipment | 21,215,215.26 | 21,655,956.19 | Dec. 440,740.93 | 2.04 |
| Traffic | 1,309,177.16 | 1,190,439.35 | Inc. 118,737.81 | 9.97 |
| Transportation | 30,283,219.54 | 28,140,127.68 | Inc. 2,143,091.86 | 7.62 |
| Miscellaneous Operations | 270,640.43 | 272,971.10 | Dec. 2,330.67 | .85 |
| General | 2,269,535.47 | 2,084,549.95 | Inc. 184,985.52 | 8.87 |
| Transportation for Investment—Credit | 534,025.80 | 519,077.09 | Inc. 14,948.71 | 2.88 |
| Totals | \$71,226,914.18 | \$67,934,815.49 | Inc. \$3,292,098.69 | 4.85 |
| Ratio of Expenses to Total Operating Revenues | 59.15% | 64.57% | Dec. 5.42% | 8.39 |
| Net Revenue from Operations | \$49,182,124.19 | \$37,284,175.50 | Inc. \$11,897,948.69 | 31.91 |
| Tax Accruals | \$11,075,000.00 | \$8,600,000.00 | Inc. \$2,475,000.00 | 28.78 |
| Uncollectible Revenue | 12,331.66 | 29,022.31 | Dec. 16,690.65 | 57.51 |
| Total Operating Income | \$38,094,792.53 | \$28,655,153.19 | Inc. \$9,439,639.34 | 32.94 |
| NON-OPERATING INCOME: | | | | |
| Hire of Freight Cars—Net | \$2,418,469.07 | \$2,386,617.48 | Inc. \$31,851.59 | 1.33 |
| Hire of Other Equipment—Net | 128,812.12 | 167,130.10 | Dec. 38,317.98 | 22.93 |
| Joint Facility Rents—Net | 280,076.96 | 302,051.62 | Dec. 21,974.66 | 7.28 |
| Totals | \$2,827,358.15 | \$2,855,799.20 | Dec. \$28,441.05 | 1.00 |
| NET RAILWAY OPERATING INCOME | \$40,922,150.68 | \$31,510,952.39 | Inc. \$9,411,198.29 | 29.87 |
| OTHER NON-OPERATING INCOME: | | | | |
| Income from Lease of Road | \$1,110.00 | \$1,110.00 | | |
| Miscellaneous Rent Income | 83,433.04 | 75,873.05 | Inc. \$7,559.99 | 9.96 |
| Miscellaneous Non-Operating Physical Property | 99,158.70 | 81,445.71 | Inc. 17,712.99 | 21.75 |
| Dividend Income | 7,098.66 | 7,048.66 | Inc. 50.00 | .71 |
| Income from Funded Securities | 812,166.14 | 488,545.33 | Inc. 323,620.81 | 66.24 |
| Income from Unfunded Securities and Accounts | 429,432.01 | 219,459.39 | Inc. 209,972.62 | 95.68 |
| Income from Sinking and Other Reserve Funds | 63,318.13 | 87.49 | Inc. 63,230.64 | ..... |
| Miscellaneous Income | 12,780.85 | 6,561.34 | Inc. 6,219.51 | 94.79 |
| Totals | \$1,508,497.53 | \$880,130.97 | Inc. \$628,366.56 | 71.39 |
| GROSS INCOME | \$42,430,648.21 | \$32,391,083.36 | Inc. \$10,039,564.85 | 30.99 |
| DEDUCTIONS FROM GROSS INCOME: | | | | |
| Rent for Leased Roads | \$97,625.26 | \$105,388.57 | Dec. \$7,763.31 | 7.37 |
| Miscellaneous Rents | 2,280.40 | 1,846.72 | Inc. 433.68 | 23.48 |
| Interest on Funded Debt: | | | | |
| Mortgage Bonds | 4,004,240.00 | 3,856,240.00 | Inc. 148,000.00 | 3.84 |
| Convertible Bonds | 113,566.37 | 263,029.23 | Dec. 149,462.86 | 56.82 |
| Equipment Obligations | 1,106,973.14 | 1,247,587.51 | Dec. 140,614.37 | 11.27 |
| Interest on Unfunded Debt | 13,274.89 | 74,618.18 | Dec. 61,343.29 | 82.21 |
| Miscellaneous Income Charges | 225,181.81 | 277,526.99 | Dec. 52,345.18 | 18.86 |
| Totals | \$5,563,141.87 | \$5,826,237.20 | Dec. \$263,095.33 | 4.52 |
| NET INCOME | \$36,867,506.34 | \$26,564,846.16 | Inc. \$10,302,660.18 | 38.78 |
| Income applied to Sinking and Other Reserve Funds | 63,318.13 | 87.49 | Inc. 63,230.64 | ..... |
| Dividends on Adjustment Preferred Stock | 919,692.00 | 919,692.00 | | |
| INCOME BALANCE: Transferred to Profit and Loss | \$35,884,496.21 | \$25,645,066.67 | Inc. \$10,239,429.54 | 39.93 |

Profit and Loss Statement

| | 1926 | 1925 | INCREASE OR DECREASE | PER CENT. |
|---|------------------------|------------------------|-----------------------------|--------------|
| CREDITS: | | | | |
| Balance, January 1st | \$60,727,284.59 | \$47,361,538.06 | Inc. \$13,365,746.53 | 28.22 |
| Credit Balance from Income | 35,884,496.21 | 25,645,066.67 | Inc. 10,239,429.54 | 39.93 |
| Unrefundable Overcharges | 54,043.46 | 57,065.38 | Dec. 3,021.92 | 5.30 |
| Repayment by Pocahontas Coal and Coke Company, Advances for Mortgage Bond Interest | 280,000.00 | 370,000.00 | Dec. 90,000.00 | 24.32 |
| Profit on Road and Equipment Sold | 21,314.36 | 4,920.97 | Inc. 16,393.39 | 333.13 |
| Donation for Construction of Sidings, etc. | 318,616.42 | 532,266.72 | Dec. 213,650.30 | 40.14 |
| From Trustees of Norfolk and Western Pension Reserve Fund in Reimbursement of Payments to Pensioned Employees | 312,103.82 | ..... | Inc. 312,103.82 | ..... |
| Miscellaneous Credits | 38,680.46 | 32,118.53 | Inc. 6,561.93 | 20.43 |
| Total Credits | \$97,636,539.32 | \$74,002,976.33 | Inc. \$23,633,562.99 | 31.94 |
| CHARGES: | | | | |
| Dividend Appropriations of Surplus, Common Stock | \$13,920,717.50 | \$10,930,694.00 | Inc. \$2,990,023.50 | 27.35 |
| Surplus Appropriated for Investment in Physical Property | 318,616.42 | 532,266.72 | Dec. 213,650.30 | 40.14 |
| Loss on Retired Road and Equipment | 37,516.49 | 71,471.60 | Dec. 33,955.11 | 47.51 |
| Surplus applied to Norfolk & Western Pension Reserve Fund | 490,000.00 | 1,700,000.00 | Dec. 1,210,000.00 | 71.18 |
| Miscellaneous Charges | 39,608.45 | 41,259.42 | Dec. 1,650.97 | 4.00 |
| Total Charges | \$14,806,458.86 | \$13,275,691.74 | Inc. \$1,530,767.12 | 11.53 |
| Balance, December 31st | \$82,830,080.46 | \$60,727,284.59 | Inc. \$22,102,795.87 | 36.40 |

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333,105.70, or 16.42 per cent, while Passenger, Mail and Express Revenues decreased \$431,115.26, or 4.19 per cent. Operating Expenses increased \$3,292,098.69, or 4.85 per cent, Maintenance of Way and Structures showing an increase of \$1,303,303.81, or 8.63 per cent, and Transportation Expenses an increase of \$2,143,091.86, or 7.62 per cent, while Maintenance of Equipment decreased \$440,740.93, or 2.04 per cent. The ratio of Operating Expenses to Operating Revenues, was 59.15 per cent, of Transportation Expenses to Operating Revenues 25.15 per cent, both these ratios being materially reduced from those of the preceding year. Net Revenue from Operations was \$49,182,124.19, an increase of \$11,897,948.69, or 31.91 per cent, over the previous year.

The results of the year's operations warranted, in the opinion of your Directors, the payment of an extra dividend of three dollars a share on the Company's Common stock.

Maintenance Expenditures

The expenses for Maintenance of Way and Structures were as follows:

| | 1926 | 1925 | INCREASE | PER CENT. |
|------------------------------------|-----------------|-----------------|----------------|-----------|
| Total Expenses | \$16,413,152.12 | \$15,109,848.31 | \$1,303,303.81 | 8.63 |
| Average per mile of road operated | 7,322.46 | 6,742.58 | 579.88 | 8.60 |
| Average per mile of track operated | 3,700.91 | 3,433.46 | 267.45 | 7.79 |

The expenses for Maintenance of Equipment were as follows:

| In which are included: | 1926 | 1925 | INCREASE OR DECREASE | PER CENT. |
|--|-----------------|-----------------|----------------------|-----------|
| Total Maintenance of Equipment Expenses | \$21,215,215.26 | \$21,655,956.19 | D. \$440,740.93 | 2.0 |
| Steam Locomotives: Repairs, retirements and depreciation | 10,650,060.92 | 10,593,959.31 | I. 56,101.61 | 5 |
| Average per locomotive | 10,995.54 | 10,605.60 | I. 389.94 | 3.7 |
| Average per 1,000 locomotive miles | 449.48 | 482.94 | D. 33.46 | 6.9 |
| Electric Locomotives (Double-units): Repairs, retirements and depreciation | 309,023.88 | 265,892.29 | I. 43,131.59 | 16.2 |
| Average per locomotive | 19,313.99 | 16,618.27 | I. 2,695.72 | 16.2 |
| Average per 1,000 locomotive miles | 499.10 | 580.05 | D. 80.95 | 14.0 |
| Freight Train Cars: Repairs, retirements and depreciation | 6,853,826.79 | 7,762,941.51 | D. 909,114.72 | 11.7 |
| Average per freight car | 149.86 | 170.89 | D. 21.03 | 12.3 |
| Average per 1,000 tons one mile | .41 | .57 | D. .16 | 28.1 |
| Passenger Train Cars: Repairs, retirements and depreciation | 923,682.01 | 931,934.87 | D. 8,252.86 | .9 |
| Average per passenger car | 1,876.14 | 1,894.83 | D. 18.69 | 1.0 |
| Average per 1,000 passengers one mile | 4.16 | 3.96 | I. .20 | 5.0 |
| Work Equipment: Repairs, retirements and depreciation | 387,453.84 | 231,820.47 | I. 155,633.37 | 67.1 |

There were in the shops undergoing and awaiting classified repairs at the close of the year 66 locomotives, or 7.0 per cent. (50 of which needed only light repairs), 9 passenger cars, or 1.6 per cent, and 370 freight and work equipment cars, or 0.8 per cent.

Taxes

Accruals for taxes in the year amounted to \$11,075,000, an increase of \$2,475,000, or 28.78 per cent, over the year 1925. This amount was made up of United States Government Taxes, \$6,128,026, and State, County and Municipal Taxes, \$4,946,974. In both instances these figures show substantial increases over the preceding year, the larger United States Government tax being due to the abnormal earnings of the year and the increase in State, County and Municipal taxes to materially higher assessments.

The percentage of Net Revenue from Operations consumed by Taxes for the year ending December 31st, 1926 was 22.52 per cent, comparing with 20.59 per cent in 1917.

Norfolk and Western Railway Company Condensed

| ASSETS | | COMPARISON WITH DEC. 31ST, 1925 | |
|--|------------------|---------------------------------|------------------|
| INVESTMENTS: | | WITH | |
| Investment in Road and Equipment: | | I. | \$14,605,060.42 |
| Road | \$283,953,904.79 | I. | 1,440,559.89 |
| Equipment | 117,114,316.94 | | |
| | | | \$401,068,221.73 |
| Deposits in lieu of mortgaged property sold | | D. | 9,735.26 |
| Miscellaneous Physical Property | | I. | 4,080,611.47 |
| Investments in Affiliated Companies: | | | |
| Stocks | \$2,077,341.42 | D. | 9,980.00 |
| Bonds | 447,540.00 | I. | 160,320.00 |
| Advances | 4,719,527.51 | I. | 181,642.11 |
| Other Investments: | | | 7,244,408.93 |
| Stocks | \$29,696.40 | I. | 25,000.00 |
| Bonds | 26,929,944.93 | I. | 15,252,012.79 |
| | | | 26,959,641.33 |
| Total Investments | | | \$439,362,618.72 |
| CURRENT ASSETS: | | | |
| Cash: | | | |
| In Treasury | \$5,249,918.78 | | |
| In Transit | 369,589.14 | | |
| Held in Trust for Relief Fund | 66,407.36 | | |
| | | | \$5,685,915.28 |
| Loans and Bills Receivable | 174,938.81 | I. | 144,738.19 |
| Traffic and Car Service Balances Receivable | 1,576,400.17 | I. | 28,818.77 |
| Net Balances Receivable from Agents and Conductors | 317,265.01 | D. | 5,274,246.35 |
| Miscellaneous Accounts Receivable | 1,637,255.47 | I. | 28,588.97 |
| Material and Supplies | 13,707,207.20 | D. | 157,046.35 |
| Interest and Dividends Receivable | 149,078.64 | I. | 1,680,164.60 |
| Other Current Assets | 74,697.68 | I. | 98,371.62 |
| | | I. | 35,372.84 |
| Total Current Assets | | | 23,322,758.26 |
| DEFERRED ASSETS: | | | |
| Working Fund Advances | \$9,792.72 | I. | 647.73 |
| Trustees for Norfolk and Western Pension Reserve Fund | 1,941,301.80 | I. | 241,214.31 |
| Norfolk and Western Railway Company and Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds | 13,730,000.00 | D. | 406,000.00 |
| Cost of Securities held in trust for Relief Fund | 1,281,264.52 | I. | 169,264.52 |
| Other Accounts | 91,550.00 | D. | 2,600.00 |
| Total Deferred Assets | | | 17,053,909.04 |
| UNADJUSTED DEBITS: | | | |
| Rents and Insurance Premiums paid in advance | \$94,470.81 | D. | 52,364.20 |
| Discount on Funded Debt | 1,908,272.74 | I. | 255,455.60 |
| Other Unadjusted Debits | 5,025,966.35 | I. | 4,420,359.09 |
| Securities Issued or Assumed—Unpledged | | | |
| Par Value of holdings at close of year | \$258,100.00 | | |
| Total Unadjusted Debits | | | 7,028,709.90 |
| | | | \$486,767,995.92 |
| | | I. | \$32,890,191.29 |

Traffic and Operating Revenue Comparisons

Comparison of traffic and operating revenue figures with those of the preceding year shows the following changes:

| | | | | |
|--|------------------|-----------|-----------------|-----------------|
| Number of passengers..... | 4,169,260 | decreased | 369,591 | 8.14 per cent. |
| Average haul of passengers..... | 53.20 miles | increased | 1.40 miles | 2.70 per cent. |
| Revenue from passenger fares..... | \$7,663,493.63 | decreased | \$367,735.32 | 4.58 per cent. |
| Average rate per passenger per mile..... | 3.455 cents | increased | 0.039 cents | 1.14 per cent. |
| Revenue freight carried..... | 58,188,077 tons | increased | 7,921,520 tons | 15.76 per cent. |
| Average haul of freight..... | 287.33 miles | increased | 15.11 miles | 5.55 per cent. |
| Revenue from freight transportation..... | \$108,703,462.59 | increased | \$15,333,105.70 | 16.42 per cent. |
| Average rate per ton per mile..... | 0.650 cents | decreased | 0.032 cents | 4.69 per cent. |
| Average tons of revenue freight per train..... | 1,483.42 | increased | 166.59 tons | 12.65 per cent. |
| Shipments of coal..... | 45,607,247 tons | increased | 7,477,540 tons | 19.61 per cent. |
| Shipments of coke..... | 471,957 tons | increased | 16,782 tons | 3.69 per cent. |
| Shipments of ore..... | 801,787 tons | increased | 230,810 tons | 40.42 per cent. |
| Shipments of pig and bloom iron..... | 218,246 tons | increased | 13,463 tons | 6.57 per cent. |
| Shipments of lumber..... | 1,593,850 tons | decreased | 21,562 tons | 1.33 per cent. |

Relief and Pension Department

At the end of the year the Relief Fund had 22,860 members, equivalent to 70.14 per cent of the total number of employees, an increase in the year in number of members of 1,380 and an increase of .99 in percentage of members to employees. The members of the Fund contributed during the year \$785,658.62 and the Fund received additional income of \$52,949.90 from interest. Against these total receipts of \$838,608.52, death benefits aggregating \$169,950.00 and sickness and accident benefits aggregating \$361,521.25 were paid, and \$307,137.27 was added to the Fund's credit balance. In the same period the Company paid the operating expenses of the Fund amounting to \$133,740.49.

At the close of the year there were 597 employees on the Pension Roll, a net increase of 41 in the year, with an average pension of \$550.20 per annum, compared with an average pension of \$521.64 per annum at the close of 1925.

Pension Reserve Fund

In December, 1926, following the precedent established in the previous year, your Directors appropriated from Surplus \$490,000, which was turned over to the Trustees of the Pension Reserve

Fund, this sum being figured from actuarial tables as sufficient to take care of pensions to employees retired in the year 1926, so long as they may live. This made a total appropriation to

date for this purpose of \$2,190,000. The Fund has received \$60,428.87 from interest and profit on sales of securities, and has paid \$312,103.82 in reimbursement for pension payments by the Company in 1926, and \$295.13 as interest on temporary loans. At the close of the year the Trustees held securities of a face value of \$1,732,000—costing with accrued interest \$1,611,852.10—and \$326,177.82 in cash.

Pocahontas Coal and Coke Company

Earnings for the year 1926 were the largest in the Company's history, royalties on total output of coal mined and coke manufactured amounting to \$1,724,436.61 and other income to \$116,827.67, making total earnings of \$1,841,264.28 compared with \$1,631,017.14 in 1925. Operating expenses were \$175,919.67 and taxes \$200,893.05, leaving net earnings of \$1,464,451.56. Sinking fund and interest on funded debt, with other deductions, resulted in net income of \$453,317.18, an increase of \$78,563.54 over the preceding year. The output of coal from the Company's leased property in 1926 was 16,509,648 tons and of coke 61,078 tons.

Under the sinking fund provision of the Pocahontas Coal

General Balance Sheet, December 31st, 1926

| | | COMPARISON WITH DEC. 31ST, 1925 | |
|---|------------------|---------------------------------|--------------------|
| CAPITAL STOCK: | | | |
| Adjustment Preferred..... | \$23,000,000.00 | | |
| Held in Treasury..... | 7,700.00 | | |
| | \$22,992,300.00 | | |
| Common..... | \$139,572,700.00 | | |
| Held in Treasury..... | 2,400.00 | | |
| | 139,570,300.00 | | |
| Total Capital Stock..... | | \$162,562,600.00 | I. \$2,251,000.00 |
| LONG TERM DEBT: | | | |
| Mortgage Bonds..... | \$95,301,500.00 | | |
| Held in Treasury..... | 13,000.00 | | |
| | \$95,288,500.00 | | |
| Convertible Bonds..... | 1,594,300.00 | | |
| Equipment Obligations..... | \$23,420,000.00 | | |
| Held in Treasury..... | 235,000.00 | | |
| | 23,185,000.00 | | |
| Total Long Term Debt..... | | 120,067,800.00 | D. 3,195,000.00 |
| CURRENT LIABILITIES: | | | |
| Traffic and Car Service Balance Payable..... | \$649,714.46 | | D. 52,942.84 |
| Audited Accounts and Wages Payable..... | 5,420,238.64 | | I. 1,058,977.36 |
| Miscellaneous Accounts Payable..... | 601,390.13 | | I. 82,339.43 |
| Interest Matured Unpaid..... | 55,016.00 | | D. 3,002.00 |
| Dividends Matured Unpaid..... | 10,118.50 | | D. 429.25 |
| Funded Debt Matured Unpaid..... | 229,923.00 | | |
| Unmatured Dividends Declared..... | 1,633,900.25 | | I. 41,455.25 |
| Unmatured Interest Accrued..... | | | |
| Total Current Liabilities..... | | 8,606,300.98 | |
| DEFERRED LIABILITIES: | | | |
| Cost of Securities Purchased for Relief Fund..... | \$1,281,264.52 | | I. 169,264.52 |
| Other Accounts..... | 261,233.10 | | I. 86,198.57 |
| Total Deferred Liabilities..... | | 1,542,497.62 | |
| JOINT LIABILITIES: | | | |
| Norfolk and Western Railway Company and Pocahontas Coal and Coke Company Joint Purchase Money Mortgage Bonds..... | | 13,730,000.00 | D. 406,000.00 |
| UNADJUSTED CREDITS: | | | |
| Tax Liability..... | \$7,827,495.55 | | I. 2,101,862.72 |
| Insurance and Casualty Reserves..... | 1,417,712.76 | | I. 1,274,151.93 |
| Operating Reserves..... | | | D. 1,077,159.43 |
| Accrued Depreciation—Road..... | 12,482,653.10 | | I. 843,285.42 |
| Accrued Depreciation—Equipment..... | 27,603,718.91 | | I. 2,729,370.92 |
| Accrued Depreciation—Miscellaneous Physical Property..... | 739,323.83 | | I. 130,042.79 |
| Other Unadjusted Credits..... | 1,134,559.21 | | I. 440,149.30 |
| Total Unadjusted Credits..... | | 51,205,463.36 | |
| CORPORATE SURPLUS: | | | |
| Norfolk and Western Pension Reserve..... | \$1,941,301.80 | | I. 241,214.31 |
| (Held by independent Trustees.) | | | |
| Additions to Property through Income and Surplus: | | | |
| Road..... | \$20,976,425.43 | | I. 318,116.42 |
| Equipment..... | 23,305,526.27 | | I. 500.00 |
| | 44,281,951.70 | | |
| Total Appropriated Surplus..... | \$46,223,253.50 | | I. 22,102,795.87 |
| Profit and Loss Balance..... | 82,830,080.46 | | |
| Total Corporate Surplus..... | | 129,053,333.96 | |
| | | \$486,767,995.92 | I. \$32,890,191.29 |

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Lands Purchase Money First Mortgage, dated December 2nd, 1901, \$415,184.32 accrued from royalties on coal mined during the calendar year 1926. From the beginning of the operation of the sinking fund in 1906 to December 31st, 1926, the accruals from royalties have aggregated \$5,771,375.87 and those from sales of lands \$204,534.45, a total of \$5,975,910.32 applicable to the purchase and retirement of mortgage bonds. Through this fund \$6,731,000 of bonds have been purchased and canceled, reducing outstanding bonds to \$13,269,000.

A further payment of \$420,000 has been made on account of indebtedness incurred in previous years to meet fixed charges; this indebtedness has now been reduced to \$969,000.

Proposed Lease of the Virginian Railway Company

Hearings upon your Company's application to the Interstate Commerce Commission for authority to lease the Virginian Railway were commenced before an Examiner on October 12th, 1925, and concluded January 28th, 1926. On May 6th, 1926, the Examiner recommended a report that the Commission find that the lease was not shown to be in the public interest. Exceptions to the report were taken by your Company and by the Virginian Railway Company and argued before the full Commission on July 8th, 1926. On October 22nd, 1926, the Commission made public a report against the lease. Further contest by litigation was considered. The Virginian management were unwilling to co-operate in a contest. The matter thus ended.

Changes in Board of Directors

At the meeting of the Board of Directors held May 25th, 1926, the resignation of Theodore Reath as a Director was received and accepted and the vacancy so caused was filled by the election

of Isaac T. Mann. The resignation of F. S. Royster as a Director was received and accepted as of January 1st, 1927, and the vacancy so caused was filled by the election of Thomas S. Southgate.

Changes in Organization

On September 30th, 1926, pursuant to the Company's Pension Regulations, Charles S. Churchill, Vice-President in charge of Purchases, Real Estate and Valuation, was retired and that office was discontinued.

William S. Battle, Jr., formerly General Claim Agent, was appointed Vice-President in charge of Valuation, Real Estate and Public Relations, a newly created office, and J. B. Baskerville, formerly Assistant General Claim Agent, was appointed General Claim Agent, both appointments being effective October 1st, 1926.

Effective August 1st, 1926, E. S. Moore, formerly Superintendent of Transportation, was appointed General Superintendent of Transportation and J. R. Talbott, formerly Superintendent of Car Service, was appointed Superintendent of Transportation.

Effective February 1st, 1927, G. F. Butler, formerly General Freight Agent, was appointed Freight Traffic Manager; S. M. Stevenson, formerly General Eastern Freight Agent, was appointed Assistant Freight Traffic Manager and O. W. Cox, formerly General Coal Freight Agent, was appointed General Freight Agent.

The Board expresses to the officers and employees its appreciation of the fidelity and efficiency with which they have served the Company throughout the year.

By order of the Board of Directors,

A. C. NEEDLES,
President.

Canadian Pacific Railway Company

Forty-Sixth Annual Report

OF THE

DIRECTORS OF THE CANADIAN PACIFIC RAILWAY COMPANY. YEAR ENDED DECEMBER 31st, 1926.

To the Shareholders:

The accounts of the Company for the year ended December 31st, 1926, show the following results:—

| | |
|--|------------------|
| Gross Earnings | \$198,025,591.69 |
| Working Expenses (including all taxes) | 153,080,464.81 |
| Net Earnings | \$44,945,126.88 |
| Deduct Fixed Charges | 14,676,358.60 |
| Surplus | \$30,268,768.28 |
| Contribution to Pension Fund | 600,000.00 |
| | \$29,668,768.28 |
| From this there has been charged a half-yearly dividend on Preference Stock of 2 per cent., paid October 1st, 1926 | \$2,002,971.76 |
| And three quarterly dividends on Ordinary Stock of 1¼ per cent. each, paid June 30th, 1926, October 1st, 1926, and December 31st, 1926 | 13,650,000.00 |
| | 15,652,971.76 |
| | \$14,015,796.52 |
| From this there has been declared a second half-yearly dividend on Preference Stock of 2 per cent. payable April 1st, 1927 | \$2,002,971.76 |
| And a fourth quarterly dividend on Ordinary Stock of 1¼ per cent., payable April 1st, 1927 | 4,550,000.00 |
| | 6,552,971.76 |
| Leaving net surplus for the year | \$7,462,824.76 |
| In addition to the above dividends on Ordinary Stock, three per cent. was paid from Special Income. | |
| SPECIAL INCOME FOR YEAR ENDED DECEMBER 31st, 1926 | |
| Net Revenue from Investments and Available Resources, Exhibit "C" | \$2,576,410.41 |
| Interest on Deposits, and Interest and Dividends on Other Securities | 2,940,485.20 |
| Net Earnings Ocean and Coastal Steamship Lines | 2,053,882.55 |
| Net Earnings Commercial Telegraph and News Department, Hotels, Rentals and Miscellaneous | 3,485,492.43 |
| | \$11,056,270.59 |
| Less: Payments to Shareholders in dividends: June 30th, 1926, October 1st, 1926, and December 31st, 1926 | 5,850,000.00 |
| | \$5,206,270.59 |
| From this a dividend has been declared payable April 1st, 1927 | \$1,950,000.00 |

Earnings and Expenses

2. The working expenses for the year, including all taxes, amounted to 77.30 per cent. of the gross earnings, and the net earnings to 22.70 per cent., as compared with 78.10 per cent. and 21.90 per cent. respectively in 1925. Excluding taxes, the ratio of working expenses to gross earnings was 74.41 per cent. and in 1925, 75.77 per cent.

Gross earnings increased \$14,669,586 over those of the previous year, and working expenses \$9,879,235. The net earnings, before deducting fixed charges, were \$44,945,126, an increase over the previous year of \$4,790,351.

The results would have been still better were it not for a rather sharp decline in gross earnings during the month of December, accompanied by an increase in operating expenses due to special charges made during that month and to the extremely severe weather in which the operations of the Company were conducted. Of the increased expenses, \$1,681,946 was in Transportation, largely attributable to the increased volume of business handled; \$2,848,282 was in Maintenance of Way and Structures, and \$3,613,922 in Maintenance of Equipment in consequence of the policy approved by your Directors that the physical properties of the Company shall always be maintained in the highest possible state of efficiency. Your Directors are of the opinion that the results must be regarded as satisfactory, constituting as they do the largest net revenues since 1917, but they would be lacking in their duty if they did not point out that the future strength of the Company will depend upon the availability of surplus earnings for re-investment in improvements and betterments of the property—the necessity of which is continuous—if the Company is to do its full share in fulfilling its two outstanding duties, namely, to supply the most efficient transportation at reasonable rates and to make its own very substantial contribution to Canadian development and industrial expansion.

Special Income

3. The special income of the Company shows a slight decrease, notwithstanding increased dividends from the Consolidated Mining and Smelting Company, due entirely to a moderate decrease in the net earnings of ocean and coastal steamship lines, to which reference is made in a later part of this Report.

Land Sales

4. The sales of agricultural lands for the year were 365,665 acres for \$4,714,139.16, being an average of \$12.89 per acre. Included in this area were 10,737 acres of irrigated land which

brought \$44.99 per acre, so that the average for the balance was \$11.92 per acre.

Sale of Securities

5. During the year your Directors issued \$12,000,000 of Equipment Notes, bearing interest at the rate of four and a half per cent. per annum, and \$20,000,000 four and a half per cent. 20-year Collateral Trust Gold Bonds, secured by the deposit of \$25,000,000 four per cent. Consolidated Debenture Stock, the issuance of which you had previously approved.

Canadian Pacific Steamships, Limited

6. The year 1926 showed a distinct improvement in traffic over the previous year due to the increased number of passengers carried, particularly in westbound third class traffic, and to economies in operation effected by close scrutiny of fuel and establishment charges throughout the year.

While the net earnings were somewhat less than during the preceding year, this was entirely due to the inclusion in the accounts of 1925 of the refund of Excess Profits Duties by the British Government, which was in the nature of a special and not a recurring payment. The earnings from strictly steamship operations on both Oceans showed a gratifying improvement. Further improvement is expected during the coming season if our advance estimates of traffic conditions prove correct.

During the year the steamships "Pretorian," "Empress of Japan," "Monteagle," "Borden," "Batsford" and "Marglen" were sold.

Pursuant to the authority granted at the last Annual Meeting, contracts have been let for the construction of two new passenger vessels of the "Montcalm" type, and five freight vessels, and the work of construction is being proceeded with, though delayed in its initial stages by the coal strike in Great Britain. The passenger vessels are, however, expected to be in service by the Summer of 1928 and the freight vessels early in the same year.

British Columbia Coast Service

7. During the year your Directors approved the purchase for the British Columbia Coast Service of the S.S. "Emperor of Port McNicoll" (re-named the "Nootka") and since the close of the fiscal year a contract has been entered into with John Brown and Company, Limited, of Clydebank, Scotland, for the construction of an additional steamer for use between Vancouver and Nanaimo at an estimated cost of \$583,000.

Hull Electric Company

8. Your Directors have disposed of the Company's interest in the Hull Electric Company (including the power development at Pagan Falls) through the sale of the capital stock of that Company to the Canadian International Paper Company for the sum of \$4,750,000. The purchase money has been paid in accordance with the terms of the contract.

Hotels

9. The reconstruction of the burnt portion of the Chateau Frontenac Hotel, mentioned in the last Annual Report, was completed on time, and that portion of the hotel was opened for operation on June 1st, 1926. The unique features of the old hotel were retained to the fullest possible extent and the whole building is now completely fireproof. The Chateau Frontenac has been more fully patronized during the year just closed than in any year since the original hotel was constructed in 1892.

The reconstruction of the older portions of the Banff Springs Hotel, mentioned in the last Annual Report, is proceeding satisfactorily, and the first portion, namely, the North Wing, the expenditure in connection with which you have approved, will be completed by June of this year. Your Directors considered it advisable also to commence during the past Winter the reconstruction of a portion of the South Wing, as it could be prosecuted without adding to the ultimate cost while the North Wing was being completed. The South Wing and the requisite changes in the present building will be completed in the Spring of 1928 at an approximate expense of \$2,992,800, exclusive of furnishings.

Your Directors, after careful consideration, have decided that it is very much in the interests of the Company to erect a hotel in the City of Toronto, where the hotel accommodation is quite inadequate to meet the commercial and tourist traffic which centres in that important city. The Board had considered such a project for some time, but had refrained from asking the shareholders for their approval in view of the extensive expenditures to which the Company was committed at the Chateau Frontenac, Lake Louise, Banff and Regina. Now, however, that the major portion of the works in connection with these hotels has been completed or is approaching completion, your Directors feel that the construction of a hotel in Toronto should not be longer delayed. To this end the property of the present Queen's Hotel

and adjacent properties have been secured, and the demolition of the present hotel and construction of the new hotel will be proceeded with as soon as the necessary detailed plans have been prepared. It has been intimated in the public press that other hotel enterprises for Toronto are contemplated, but your Directors do not feel that the Company's plans should be in any degree altered because of these reports. Your approval of the prosecution of the undertaking and the expenditure necessary to complete the work at the earliest reasonable date will be asked.

Branch Lines

10. During the past year branch line construction in the Western Provinces was proceeded with, 135 miles being graded, 192 miles of track being laid and 175 miles ballasted on lines the construction of which you had previously authorized.

Under agreement dated the first of August, 1926, between your Company and the Manitoba Great Northern Railway Company, a portion of the latter Company's railway between Carman and Plum Coulee (26.22 miles in length) was taken over and now forms a portion of the Manitoba District.

Your Directors are of the opinion that further extensions should be built as conditions warrant, and your authority will be asked for proceeding with the construction and for the issue of Consolidated Debenture Stock in aid of the following lines, namely:

| | |
|---|-------------|
| 1. Moose-Jaw Southwesterly (Saskatchewan), Mileage 96 to 109 | 13.0 miles |
| 2. Rosetown Northerly (Saskatchewan), Mileage 0 to 21 | 21.0 miles |
| 3. Gem Colony Branch (Branch from Rosemary North) (Alberta), Mileage 0 to 8.5 | 8.5 miles |
| 4. Cutknife-Whitford Lake (Alberta), Mileage 115 to 181 | 66.0 miles |
| 5. Asquith to Cloan (Saskatchewan), Mileage 0 to 28 | 28.0 miles |
| 6. Cassils Southerly (Alberta), Mileage 0 to 22 | 22.0 miles |
| Total | 158.5 miles |

It is also proposed to extend the Tuffnell-Prince Albert Branch of the Manitoba and North-Western Railway across the Saskatchewan River at Nipawin, a distance of four miles, and to construct a branch of the same railway south and west from Kandahar or Foam Lake, a distance of 37 miles. The Manitoba and North-Western Railway Company has authority to issue Bonds not exceeding \$40,000 per mile, which will, in the usual course, be acquired by this Company with the proceeds of the sale of Consolidated Debenture Stock to be issued for the purpose.

Capital Expenditures

11. In anticipation of your confirmation, your Directors authorized capital appropriations, in addition to those approved at the last annual meeting, aggregating for the year 1926, \$3,852,266, and ask your approval to expenditures on capital account during the present year of \$8,448,702. Of this amount the principal items are:

| | |
|---|-----------|
| Replacement and enlargement of structures in permanent form | \$615,707 |
| Additional stations, round houses, freight sheds, and shops, and extensions to existing buildings | 1,743,576 |
| Tie plates, rail anchors, ballasting, ditching and miscellaneous roadway betterments | 890,978 |
| Replacement of rail in main and branch line tracks with heavier section | 1,381,730 |
| Additional terminal and side track accommodation | 839,901 |
| Improving coaling and watering facilities | 156,210 |
| Mechanical Department, machinery at various points | 183,234 |
| Improvements in connection with Telegraph Service | 331,230 |
| British Columbia Lake and River Steamers | 50,000 |
| British Columbia Coast Steamships | 39,860 |
| Double track | 995,000 |

The balance of the amount is required for miscellaneous works to improve facilities and effect economies over the whole system.

Minneapolis, St. Paul and Sault Ste. Marie Railway Company

12. The results of the operations of your subsidiary, the Minneapolis, St. Paul and Sault Ste. Marie Railway Company (including the Wisconsin Central) were not good, the Soo Line proper showing a net surplus of \$121,000 as against a net surplus in 1925 of \$1,764,000, and the Wisconsin Central showing a deficit of \$105,000 in 1926, as against an operating surplus in 1925 of \$308,000. The result was largely due to the crop failures in the districts served by the lines of the Soo System, though a loss of \$3,046,427 in revenue from agricultural products was partly made up by an increase in livestock products and iron ore. The crop failures were chiefly caused by the

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severe drought in May and June and the excessive rains in August and September. It is, however, satisfactory to know that diversification of farming operations was given a further impetus, and the excessive rains which had such a detrimental effect on the 1926 crop have provided plenty of sub-soil moisture.

Your Directors feel quite confident that the Soo Line will show better earnings in the future due to the improvement in general business conditions which should produce more stable traffic and less fluctuation in railway earnings.

Increase in Stock

13. At a special general meeting of the shareholders held on October 7th, 1914, a resolution was adopted authorizing an increase of the Company's Ordinary Capital Stock to the extent of 750,000 shares of the par value of \$100 each; i.e., from \$260,000,000 to \$335,000,000, in order to make it accord with the amount which the Company is empowered by Order of the Governor-General-in-Council to issue. The resolution provided, however, that such increase should not be issued until the sanction of the shareholders thereto had first been obtained at a special meeting duly called for the purpose. As mentioned in the notice to the shareholders, the forthcoming annual general meeting will be made special for the purpose of sanctioning the issue of such increased Stock and the disposal of it in such amounts, on such terms and at such times as the Directors may from time to time decide, the proceeds to be applied in improving the Company's property, adding to its facilities and equipment and constructing such works as in the opinion of the Directors are desirable in connection with the Company's business.

General Conditions

14. In the report covering the operations of the Company for the year 1925, your Directors expressed the view that Canada's financial position was then sounder than at any time since the War and that only the adoption of definite fiscal policies, more rigid regard for economy in public expenditures and a proper immigration policy were needed to ensure a marked and speedy return to prosperous conditions. This view has been borne out by the progress made during 1926, and it can be confidently stated that conditions generally throughout Canada were materially better at the close of 1926 than they were at the end of the preceding year. While, in the opinion of your Directors, the country's progress during this and the succeeding years should be substantial, they nevertheless feel impelled to record the conviction which they still hold that public expenditures should be carefully scrutinized and restricted.

Immigration increased materially in 1926, there being admitted to the country 130,569 new settlers, as compared with 80,904 during 1925, and with the co-operation of the Government and the transportation and immigration agencies the prospects for 1927 are even better. There is in Great Britain and in the United States an increased interest in Canada which gives promise of an influx of additional capital for the development of its natural resources and the expansion of its industries. Mining operations are more extensive and larger mineral areas have been opened up for development. Substantial progress has also been made in the pulp and paper industry and in the development of the country's valuable water powers. Another factor of great importance to the country's progress has been the steady improvement in the morale of its people, due largely to better agricultural conditions and to the fundamental soundness of the country asserting itself. Reductions in taxation, so necessary to release for investment the savings of the people, have taken place, and further and equally necessary reductions are expected. All these factors are evidence of the substantial progress which your Directors anticipated would take place when they last reported to you.

Additional Directors

15. A by-law will be submitted for your approval pursuant to the terms of the amendment to your Company's Charter obtained in 1920 increasing the number of Directors to eighteen and providing for the method of election.

Stock Holdings

16. The position of the holdings of the Common Stock of the Company at the end of the fiscal year just closed was as follows:

| | |
|-----------------------|--------|
| United Kingdom | 53.96% |
| Canada | 19.43% |
| United States | 18.74% |
| France | 2.87% |
| Other countries | 5.00% |

Death of Sir Thomas Skinner

17. Sir Thomas Skinner, Bart., who was elected a Director of the Company in May, 1889, and who in November of the same year was appointed Financial Agent of the Company in

London, died on the 11th of May, 1926. He had been connected with the Company for a period of thirty-seven years, during which he rendered most loyal and efficient service, particularly in connection with the Company's financial arrangements in London and the marketing of its securities there.

Appointment of Messrs. McKenna and Peacock

18. The Right Honorable Reginald McKenna, of London, was appointed a Director to fill the vacancy created by the death of Sir Thomas Skinner, Baronet, and Mr. E. R. Peacock, also of London, was appointed a Director to fill the vacancy created by the death of Sir Augustus Nanton.

Retiring Directors

19. The undermentioned Directors will retire from office at the Annual Meeting. They are eligible for re-election:

COLONEL HENRY COCKSHUTT,
SIR HERBERT S. HOLT,
COLONEL FRANK S. MEIGHEN, C.M.G.,
MR. F. W. MOLSON.

For the Directors,

E. W. BEATTY,
President.

Montreal, March 14th, 1927.

CANADIAN PACIFIC RAILWAY COMPANY, GENERAL BALANCE SHEET, DECEMBER 31st, 1926

Assets

| | |
|---|--------------------|
| PROPERTY INVESTMENT: | |
| Railway, Rolling Stock Equipment and Lake and River Steamers | \$664,107,040.36 |
| OCEAN AND COASTAL STEAMSHIPS | 62,118,329.40 |
| ACQUIRED SECURITIES (COST) | 142,510,386.78 |
| ADVANCES TO CONTROLLED PROPERTIES AND INSURANCE PREMIUMS | 13,589,890.90 |
| INVESTMENTS AND AVAILABLE RESOURCES: | |
| Deferred Payments on Lands and Townsites | \$56,043,062.48 |
| Provincial and Municipal Securities | 792,721.29 |
| Miscellaneous Investments, Exhibit "C," Cost | 24,522,842.60 |
| Assets in Lands and Properties, Exhibit "D" | 93,805,866.44 |
| | 175,164,492.81 |
| WORKING ASSETS: | |
| Material and Supplies on Hand | \$22,892,407.82 |
| Agents' and Conductors' Balances | 4,985,260.78 |
| Net Traffic Balances | 1,249,210.09 |
| Imperial, Dominion and United States Governments, Accounts due for Transportation, etc. | 1,174,844.80 |
| Miscellaneous Accounts Receivable | 7,303,842.08 |
| Cash in Hand | 42,813,394.86 |
| | 80,418,960.43 |
| | \$1,137,909,100.68 |

Liabilities

| | |
|---|--------------------|
| CAPITAL STOCK: | |
| Ordinary Stock | \$260,000,000.00 |
| Four Per Cent Preference Stock | 100,148,587.78 |
| | \$360,148,587.78 |
| FOUR PER CENT CONSOLIDATED DEBTURE STOCK..\$304,244,882.08 | |
| LESS: Collateral as below | 40,000,000.00 |
| | 264,244,882.08 |
| TEN YEAR 5% COLLATERAL TRUST GOLD BONDS (1934) | |
| | 12,000,000.00 |
| TWENTY YEAR 4% COLLATERAL TRUST GOLD BONDS (1946) | |
| | 20,000,000.00 |
| TWENTY YEAR 4% SINKING FUND SECURED NOTE CERTIFICATES (1944) | |
| | 30,000,000.00 |
| LESS: Purchased by Trustee and cancelled | 2,135,400.00 |
| | 27,864,600.00 |
| LESS: Amount held by Trustee | 286,989.87 |
| | 27,577,610.13 |
| MORTGAGE BONDS: | |
| Algoma Branch 1st Mortgage 5 per cent.. | 3,650,000.00 |
| CURRENT: | |
| Audited Vouchers | 7,581,800.77 |
| Pay Rolls | 3,953,516.56 |
| Miscellaneous Accounts Payable | 4,693,763.88 |
| | 16,229,021.21 |
| ACCRUED: | |
| Rentals of Leased Lines and Coupons on Mortgage Bonds | 1,029,460.40 |
| EQUIPMENT OBLIGATIONS | 18,410,000.00 |
| RESERVES AND APPROPRIATIONS: | |
| Equipment Replacement | 903,931.88 |
| Steamship Replacement | 15,405,048.39 |
| Reserve Fund for Contingencies and for Contingent Taxes | 20,263,535.56 |
| | 36,572,515.83 |
| PREMIUM ON ORDINARY CAPITAL STOCK SOLD: | |
| LESS: Discount on Collateral Trust Gold Bonds and Note Certificates | 40,278,965.22 |
| NET PROCEEDS LANDS AND TOWNSITES | 74,320,094.81 |
| SURPLUS REVENUE FROM OPERATION | 142,466,061.93 |
| SPECIAL RESERVE TO MEET TAXES IMPOSED BY DOMINION GOVERNMENT | |
| | 2,492,503.36 |
| SURPLUS IN OTHER ASSETS | 118,489,397.93 |
| | \$1,137,909,100.68 |

[ADVERTISEMENT]

Railway Finance

(Continued from page 1091)

Mont., extending from Great Northern Transfer to Queen Siding, 19.61 miles.

PENNSYLVANIA.—Hearing on Tentative Valuation Postponed.—The Interstate Commerce Commission has postponed from March 28 to April 25, the hearing on its tentative valuation reports on the various companies comprised in the Pennsylvania system, before Examiners Gibson and Woodrow.

ST. LOUIS-SAN FRANCISCO.—Stock Issue.—Stockholders have been advised of their right to subscribe for new stock in a letter addressed to them by E. N. Brown, chairman reading as follows:

"The board of directors of St. Louis-San Francisco Railway Co. has authorized the issue of \$15,096,200 par value of the common stock of the company, consisting of 150,962 shares of the par value of \$100 each, and such issue has been approved by the Interstate Commerce Commission.

"Each holder of common stock of record at the close of business on April 9, 1927, will be entitled to subscribe at par and accrued dividends for such additional common stock in the proportion of three shares of such additional stock for each ten shares of common stock held by him on said date, as shown by the books of the company. The subscription privilege will expire at 2 p. m., May 16, 1927.

"As soon as practicable after April 9, warrants will be mailed to each common stockholder specifying the number of shares for which he is entitled to subscribe under this offer. Payments for stock subscribed for must be made in full on or before May 16. The price will be \$101 per share, being the par value of the stock plus accrued dividends at the rate of 8 per cent per annum from April 1, to May 16. The new stock will rank for dividends from April 1, 1927.

"The subscription of common stockholders to this additional common stock has been underwritten by Speyer & Co. and J. & W. Seligman & Co.

"It is expected that the proceeds of this issue of common stock will provide for the company's capital requirements during the balance of the current year, including the construction of 152 miles of railroad from Aberdeen, Miss., to Kimbrough, Ala., connecting the lines of the company with the lines of its subsidiary, the Muscle Shoals, Birmingham & Pensacola (in process of re-building), and providing a through line from St. Louis and other points on the company's lines to the Gulf of Mexico."

Speyer & Co. and J. & W. Seligman & Co. in a statement point out that this is the fourth railroad system that is providing for its capital requirements through the issue of common stock; in January, 1924 the New York Central offered \$31,500,000 common stock; in October, 1926, the Southern Railway about \$10,000,000, and in December last the Atlantic Coast Line about \$13,800,000 common stock, and in each instance the additional issues were promptly subscribed for by the stockholders of the respective companies.

SOUTHERN RAILWAY.—Correction.—An incorrect reference appeared under "Dividends Declared" on page 920 in the *Railway Age* of March 12 in the notation that a dividend of 5 per cent had been declared on Mobile & Ohio stock transfer certificates payable April 1. This should have read to indicate that the regular semi-annual dividend of "2" per cent on the Mobile & Ohio stock "trust" certificates had been declared.

TEXAS & PACIFIC.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of \$30,000,000 of general and refunding mortgage 5 per cent

gold bonds, for the sale of \$16,000,000 of the bonds to Kuhn, Loeb & Co. at 97, and for the pledge of \$14,000,000 of the bonds as collateral for short-term notes. The proceeds of the sale of the bonds are to be used to reimburse the treasury for expenditures amounting to \$6,679,417 and to redeem at par two issues of secured gold notes.

Equipment Trust Certificates.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$1,425,000 of equipment trust certificates, to be sold to Freeman & Co., the highest bidders, at 98.544.

TOLEDO, PEORIA & WESTERN RAILROAD CORPORATION.—Acquisition.—The Interstate Commerce Commission has authorized this company to acquire and operate lines formerly owned by the Toledo, St. Louis & Western Railway in Illinois and to issue \$5,000 of common stock in part payment for the property to be acquired. The company had asked authority to issue \$1,000,000 of bonds and an additional amount of stock. Upon the facts presented, the report says, the commission is disposed to authorize a total issue of \$800,000 of securities and the record will be held open in order that the applicant may modify its proposals.

WABASH.—Equipment Trust Certificates.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$2,625,000 of 4½ per cent equipment trust certificates to be sold to Freeman & Co., the highest bid-

ders, at 98.555. They are to be used in the acquisition of 500 40-ton steel under-frame single-sheathed automobile box cars at \$2,155 each; 500 at \$2,146 each; 12 combination passenger and baggage cars at \$23,300; 10 coaches at \$28,327; 6 chair cars at \$28,523 and 4 at \$28,100; 6 steel dining cars at \$43,760; 4 combination chair and lounge cars at \$43,146; and 2 cafe cars at \$40,455.

Average Price of Stocks and Bonds

| | Mar. 29 | Last week | Last year |
|---|---------|-----------|-----------|
| Average price of 20 representative railway stocks | 108.48 | 106.55 | 84.69 |
| Average price of 20 representative railway bonds | 100.27 | 99.55 | 95.24 |

Dividends Declared

Minneapolis, St. Paul & Sault Ste. Marie (leased lines)—2 per cent, payable April 1 to holders of record March 19.
Missouri-Kansas-Texas.—Preferred A. 1½ per cent, quarterly, payable May 2 to holders of record April 15.

Valuation Reports

The Interstate Commerce Commission has issued final or tentative valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes, as of the respective valuation dates, as follows:

Final Reports

Ohio River and Western...\$ 1,924,400 1917

Tentative Reports

Chicago Junction (owned and used)\$ 2,475,000 1919
(used) 29,192,626 1919

Railway Officers

Executive

R. Lee Kempner has been elected president of the Rio Grande, with headquarters at Galveston, Tex.

T. H. Steffens, vice-president of the Sand Springs, has been elected president, with headquarters at Sand Springs, Okla., succeeding Charles Page, deceased.

J. S. Williams, Jr. and **F. H. Weston** have been elected vice-presidents of the George & Florida. The following executive committee was appointed on March 17: **R. Lancaster Williams**, **W. H. Coverdale**, **W. H. Griffin**, **A. C. Sherwood** and **H. W. Purvis**, president of the road.

George D. Dixon, assistant to the president of the Pennsylvania, with headquarters at Philadelphia, and for many years the company's vice-president in charge of traffic, has retired, in accordance with the pension regulations of the company. Mr. Dixon was 70 years old on March 28. He was born in Philadelphia on March 28, 1857, and entered the service of the Pennsylvania on October 18, 1883, in the claim bureau of the general freight department

at Philadelphia. He was then transferred to the rate bureau, and was later advanced to chief rate clerk. On December 1, 1894, he was appointed division freight agent at Baltimore. In May, 1899, Mr. Dixon was transferred from Baltimore to Philadelphia and appointed assistant general freight agent of the Pennsylvania Railroad, the Philadelphia, Wilmington & Baltimore, the Northern Central and the West Jersey & Seashore. On June 1, 1903, by a change in the organization of these companies, he was appointed freight traffic manager. On May 8, 1912, Mr. Dixon was elected vice-president in charge of traffic, of the Pennsylvania Railroad, the Philadelphia, Baltimore & Washington, the Northern Central and the West Jersey & Seashore. He was elected a director of the Pennsylvania Railroad Company in September of the same year. During the period of Federal control, Mr. Dixon remained with the corporation as traffic vice-president, and upon the termination of Federal control, he became vice-president in charge of traffic of the entire Pennsylvania Railroad System, including the lines West of Pittsburgh, and continued in that position until August, 1925, when to permit recovery of impaired health, Mr.

Dixon, at his own request, was relieved of certain of his responsibilities and appointed assistant to the president. He has continued, however, to exercise general oversight in an advisory capacity with reference to the company's traffic policies.

Robert Wilson, assistant general manager and comptroller of the Pacific Great Eastern, has been appointed general manager, with headquarters at Vancouver, B. C., succeeding **Thomas Kilpatrick**, resigned.

Financial, Legal and Accounting

C. A. Patterson has been appointed auditor of the Missouri Southern, with headquarters at Leeper, Mo., succeeding **J. R. Midkiff**, resigned.

H. G. Fitzpatrick, commerce agent on the Chesapeake & Ohio, has been appointed assistant general attorney, with headquarters at Richmond, Va.

Frank J. Fell, Jr., who has been appointed comptroller of the Pennsylvania, with headquarters at Philadelphia, was born in Philadelphia in 1878, and was educated in the public schools and at Temple College. He entered railway service on March 10, 1896, with the Pennsylvania, as a clerk in the office of the auditor of passenger receipts. After various promotions, he was advanced to



F. J. Fell, Jr.

statistician on the staff of the comptroller in 1909, and later became chief statistician. He became general accountant in 1917 and afterward assistant comptroller, which position he held until September 1, 1925, when he was advanced to deputy comptroller. This position he was holding at the time of his recent appointment.

Operating

J. W. Fox has been appointed general manager of the Carolina Southern, with headquarters at Ahoskie, N. C.

W. I. Spidler has been appointed chief special agent of the Chicago, Indianap-

olis & Louisville, with headquarters at Chicago, succeeding **A. H. Scofield**, resigned.

P. M. Allen, chief general signal inspector of the New York Central, with headquarters at Albany, N. Y., has been appointed trainmaster on the Pennsylvania division, with headquarters at Corning, N. Y.

A. Ewing, superintendent on the Western lines of the Atchison, Topeka & Santa Fe, at Las Vegas, N. M., has been advanced to assistant general manager of the Western district of the Eastern lines, with headquarters at Topeka, Kan., succeeding **D. S. Farley**, transferred to the Eastern district, with headquarters at the same point.

D. W. Kelly, superintendent of the Milwaukee (Wis.) terminals of the Chicago, Milwaukee & St. Paul, has been promoted to general superintendent of the Middle district of the Eastern lines, with headquarters at Milwaukee, succeeding **W. J. Thiele**, deceased. **N. A. Ryan**, division superintendent, with headquarters at Terre Haute, Ind., has been transferred to succeed Mr. Kelly. Mr. Ryan has been replaced by **A. J. Elder**, division superintendent, with headquarters at Sioux City, Iowa, who in turn has been succeeded by **F. T. Beuchler**, assistant superintendent of the Twin City terminals, with headquarters at Minneapolis, Minn. **M. J. Gruber**, trainmaster at the Twin City terminals, has been promoted to assistant superintendent, succeeding Mr. Beuchler.

Lyttleton F. Wilson, who has been promoted to assistant general manager of the Denver & Rio Grande Western, with headquarters at Denver, Colo., was born on April 30, 1883, in Trigg County, Ky., and was educated at Bethel College. Mr. Wilson entered railway service in 1901 with the Louisville & Nashville at Louisville, Ky., and in March, 1903, he became a stenographer for the Terminal Railroad Association of St. Louis at St. Louis, Mo., where he remained until August of the following year when he entered the engineering department of the San Pedro, Los Angeles & Salt Lake (now a part of the Union Pacific System) as a clerk on construction. From March, 1905, to June, 1907, he served as secretary to the general manager of the Mexican International (now a part of the National of Mexico). He then became secretary to the general manager of the Denver & Rio Grande and served subsequently in that capacity for the car distributor and the assistant car accountant and as chief clerk to the assistant general manager and to the general manager. On May 1, 1917, Mr. Wilson was promoted to superintendent of transportation, a position he held, with the exception of a change in title in 1925 to that of general superintendent of transportation, until his further promotion to assistant general manager on April 1.

I. H. Luke, who, on April 1, retired as general manager of the Denver &

Rio Grande Western, with headquarters at Denver, Colo., was born on a farm near Tama, Iowa. He entered railway service in 1877 in the roadway department of the Missouri Pacific and four years later he was transferred to the operating department as a telegraph operator. From 1884 to 1889, Mr. Luke served as a train dispatcher, then becoming chief dispatcher, and in 1896 being promoted to division superintendent, in which capacity he served at Concordia, Kans., and at Sedalia, Mo.



I. H. Luke

In December, 1902, he left the Missouri Pacific to enter the service of the Denver & Rio Grande (now the D. & R. G. W.) as superintendent of the Second division, with headquarters at Salida, Colo., and later as superintendent of the Third division, where he remained for the next five years, when he was appointed superintendent of the Kansas City Southern at Texarkana, Tex. On January 6, 1910, Mr. Luke returned to the D. & R. G. as superintendent of the First division, with headquarters at Pueblo, Colo., and before the end of the year he was appointed general manager of the Missouri, Oklahoma & Gulf at Muskogee, Okla. Late in 1911 he again entered the service of the D. & R. G., and until February 1, 1917, he acted as superintendent of the Fourth division at Alamosa, Colo., superintendent of the Second division at Salida, and superintendent of the Salt Lake division at Salt Lake City, Utah. At the end of that time he became vice-president and general manager of the Utah, with headquarters at Salt Lake City. On October 1, 1918, Mr. Luke was appointed general superintendent of the D. & R. G., becoming general superintendent of the Utah lines in 1922. He was promoted to general manager of the system in 1923, a position he held continuously until his retirement.

Traffic

G. C. Dickens has been appointed general agent of the Alaska, with headquarters at Washington, D. C., effective April 1.

William R. Sibley has been appointed general agent of the Erie, with headquarters at Seattle, Wash., succeeding H. J. Steeple, resigned.

Edward F. Stock, general freight and passenger agent of the Peoria & Pekin Union, has been appointed traffic manager, with headquarters at Peoria, Ill., and the position of general freight and passenger agent has been abolished.

W. G. Chamberlain, general western freight agent of the Chesapeake & Ohio, with headquarters at Cincinnati, Ohio, has been appointed assistant general freight agent, with headquarters at Richmond, Va. George W. Wood has been appointed general western freight agent to succeed Mr. Chamberlain.

Edward Howe, general agent of the Wheeling & Lake Erie and the Lorain & West Virginia at Minneapolis, Minn., has been transferred to Detroit, Mich., succeeding W. D. Morley, transferred to Zanesville, Ohio. A. L. Leverentz has been appointed general agent at Minneapolis to succeed Mr. Howe. S. H. Denney, general agent at Zanesville, has been transferred to Philadelphia, Pa.

Edward W. Brunck, who has been appointed assistant freight traffic manager of the Michigan Central, with headquarters at Detroit, Mich., was born on January 16, 1883, near Lancaster, N. Y., and was educated in the public schools of Buffalo, N. Y. He entered railway service on June 1, 1901, with the New York Central & Hudson River (now a part of the New York Central) as a stenographer and clerk in the Carroll street freight station at Buffalo, N. Y., and on July 1, 1902, was transferred to the office of the division freight agent in the same city. On January 1, 1908, Mr. Brunck was transferred to the office of the manager of the New York



Edward Brunck

Central Fast Freight Lines at Buffalo, and on January 1, 1912, was appointed chief of the tariff bureau of the same lines at Chicago. On November 1, 1917, he was appointed chief clerk to the general freight agent of the Michigan Central at Detroit, Mich., and on Septem-

ber 1, 1919, was appointed assistant general freight agent, with the same headquarters. Mr. Brunck was appointed general freight agent on September 15, 1924, which position he was holding at the time of his recent appointment as assistant freight traffic manager.

R. P. Paterson, general freight agent of the Pere Marquette, with headquarters at Detroit, Mich., has been promoted to assistant freight traffic manager, with headquarters at the same point. Mr. Paterson will be succeeded by E. T. Reynolds, assistant general freight agent, with headquarters at Detroit. J. C. Harms, commercial agent at Chicago, has been promoted to succeed Mr. Reynolds.

Mechanical

William Keiser, general enginehouse foreman on the Indiana Harbor Belt at Blue Island, Ill., has been promoted to the position of master mechanic, with headquarters at Gibson, Ind.

J. P. Christiansen, who has been promoted to the position of mechanical engineer of the Chicago, Indianapolis & Louisville, with headquarters at Lafay-



J. P. Christiansen

ette, Ind., was born on July 16, 1885, in Denmark. He received his early education in the grade schools, academy and State Polytechnic Institute in Denmark, coming to the United States in 1905. For a number of years Mr. Christiansen engaged in the hardware business and the machinist's trade in Colorado, serving then as machinist and erecting foreman for the Charles S. Stickney Gas Engine Works, St. Paul, Minn. In 1912 he entered the service of the Great Northern as a draftsman in the mechanical department at St. Paul. At the beginning of the World War he became mechanical engineer in charge of designing munitions forge plants and finishing plants for the Twin City Forge & Foundry Company, and in January, 1919, he returned to railway service as chief draftsman of the Minneapolis & St. Louis at Minneapolis,

Minn. In the same year Mr. Christiansen was appointed a special estimator in the mechanical department of the Great Northern, becoming chief draftsman of that department in April, 1922. Mr. Christiansen remained in this position until his appointment as mechanical engineer of the Monon.

O. P. Reese, who has been appointed general superintendent of motive power of the Central region of the Pennsylvania, with headquarters at Pittsburgh, Pa., was born on May 29, 1876, at Louisville, Ky., and was graduated from Purdue University in 1898. He



O. P. Reese

entered railway service in August, 1898, as an apprentice for the Louisville & Nashville, which position he held until September, 1900, when he became a draftsman for the Pennsylvania at Allegheny, Pa. From September, 1900, until September, 1901, he was engaged in special work for that road at Fort Wayne, Ind., and then served as a special apprentice until August, 1903. At the latter time he became gang foreman at Allegheny, Pa., and held this position until the following February. From February, 1904, until December of that year, Mr. Reese was foreman of tests for the Pennsylvania at the St. Louis World's Fair, and then until May of the following year was motive power inspector. From May, 1905, until May, 1906, he was general division foreman, and from June, 1908, until June, 1910, was division master mechanic. From this time on Mr. Reese held the following positions consecutively: June, 1910, to September, 1911, assistant engineer of motive power; September, 1911, to May, 1915, master mechanic; May, 1915, to January, 1917, assistant engineer of motive power in the office of the general superintendent of motive power of the same road; January, 1917, until March, 1920, superintendent of motive power of the Central system of the lines west of Pittsburgh, at Toledo, Ohio; March, 1920, to April, 1921, the same position on the Northern Ohio division. From April, 1921, until February, 1924, Mr. Reese was superintendent of motive power of the Illinois division, and from

the latter date until April, 1925, was assistant general superintendent of motive power on the Northwestern region at Chicago. In April, 1925, Mr. Reese was appointed superintendent of motive power of the Eastern Ohio division of the Central region, which position he was holding at the time of his recent appointment.

Engineering, Maintenance of Way and Signaling

Charles J. Rist, division engineer on the Pere Marquette, with headquarters at Saginaw, Mich., has been advanced to engineer of maintenance of way, with headquarters at Detroit, Mich., a newly created position.

Thomas P. Watson, who has been appointed principal assistant engineer in charge of Philadelphia improvements on the Pennsylvania, with headquarters at Philadelphia, Pa., was born on November 21, 1886, at Chester, Pa., and was educated in the public schools of that place. He entered railway service in



T. P. Watson

July, 1902, with the Pennsylvania, and from January, 1903, until January, 1918, was successively chainman, rodman, levelman and transitman on location and construction in the chief engineer's department of the Pennsylvania, lines East. From January, 1918, until July, 1919, he was a captain in the Transportation Corps of the A. E. F. on location and construction of railway and dock facilities in France. At the latter time Mr. Watson became assistant engineer on location and construction in the chief engineer's department of the Pennsylvania, Eastern and Central regions, which position he was holding at the time of his recent appointment.

Joshua D. Esposito, who has been chief engineer and general manager of the Chicago Union Station Company, Chicago, has discontinued his connection with the company in that capacity because of the completion of the construction of the Chicago Union Station facilities. He will continue with the

company as consulting engineer, effective April 1.

Harold Rindal, who has been appointed chief engineer of the Pacific Great Eastern, with headquarters at Vancouver, B. C., was born in Norway on November 1, 1879, and received his education in the Technical College at Trondhjem, Norway. Mr. Rindal entered railway service in 1900 as a rodman on the Norwegian Government Railways. Immediately after coming to the United States he became a rodman on the Pennsylvania at Pittsburgh, Pa., and in June, 1903, he joined the forces of the Canadian Pacific as a transitman at Winnipeg, Man. In September of the same year he was advanced to resident engineer on the Central division, with headquarters at Ft. William, Ont., and two years later he was promoted to assistant division engineer of the same division, with headquarters at Winnipeg. From April, 1907, to June, 1910, Mr. Rindal served as assistant engineer in the office of assistant chief engineer of the Western lines and he was then promoted to the position of district engineer of the British Columbia district, with headquarters at Vancouver, B. C. He was transferred to the Alberta district, with headquarters at Calgary, Alta., in 1922 and early in the following year he resigned to form a connection with the North Western Dredging Company at Vancouver. While with this company Mr. Rindal participated in the placing of the gravel fill for the Canadian Pacific pier at Vancouver, dredging for a drydock at the Wallace Ship Yard, Vancouver, and excavation of more than 100,000 cu. yd. of rock for the Vancouver Harbor Commissioners' grain elevator and jetty. He was appointed as chief engineer of the Pacific Great Eastern from this post.

W. J. Backes, engineer maintenance of way of the Boston & Maine, with headquarters at Boston, Mass., has been appointed chief engineer, reporting to the president, with the same headquarters. The engineering, construction, valuation, maintenance of way and signal departments are now combined and are designated as the engineering department under the direction of the chief engineer. **Frank C. Shepherd**, chief construction engineer at Boston, has been appointed consulting engineer, reporting to the chief engineer. **William F. Cummings**, auditor and valuation engineer at Boston, has been appointed engineer maintenance of way, with the same headquarters, succeeding Mr. Backes. **C. J. Griffin**, real estate engineer at Boston, has been appointed principal assistant engineer. **Warren Y. Scott**, signal engineer and the men above mentioned, will report to the chief engineer, Mr. Backes. Mr. Griffin will also report to the consulting engineer on matters within the jurisdiction of the latter. The offices of electrical engineer, architect and real estate engineer have been abolished, and the duties have been assumed by the principal assistant engineer. Signal supervisors will report to division en-

gineers on matters pertaining to maintenance, and to the signal engineer on standards and engineering. **Guy H. Watson**, division engineer of the Portland division, with headquarters at Salem, Mass., has been appointed assistant to the engineer maintenance of way, with headquarters at Boston. **Joseph A. Parant** has been appointed engineer of standards, with headquarters at Boston. Both will report to the engineer maintenance of way. **Timothy G. Sughrue**, supervisor of bridges and buildings of the Portland division, with headquarters at Salem, Mass., has been appointed division engineer, succeeding Mr. Watson. The Portland division engineering headquarters will continue at Salem.

Obituary

W. P. Kimble, assistant engineer on the Erie, with headquarters at Galion, Ohio, died on March 8, aged 69 years, while on a leave of absence at Los Angeles, Cal.

George H. Crosby, who retired as assistant to the vice-president in charge of traffic of the Chicago, Burlington & Quincy on March 15, 1926, died on March 30, at the Deaconess Hospital, St. Louis, Mo. Mr. Crosby had gone to St. Louis on a business trip from his home at Chicago and had been ill in that city for less than a week when he died of pneumonia.

A. S. Going, terminal engineer of the Canadian National, with headquarters at Montreal, Que., died in that city on March 21. Mr. Going was born on April 7, 1860, at Portland, Ore., and was educated at Lafayette College. He entered railway service in June, 1880, as an instrumentman with the Oregon Railway & Navigation Company, and from 1881 until 1883, was assistant engineer of the Northern Pacific. From 1884 until 1886, he was assistant engineer of the Oregon Pacific (now a part of the Southern Pacific) and during 1887 and 1888, was resident engineer on the Seattle, Lake Shore & Eastern (now a part of the Northern Pacific) and then served in the same capacity on the Northern Pacific until 1889. From 1890 until 1902, he was in private practice in the state of Washington and in British Columbia. Mr. Going then served as division engineer of the Great Northern lines in British Columbia during 1903 and 1904, and then became exploratory engineer for the Grand Trunk Pacific (now a part of the Canadian National) for British Columbia, which position he held until 1905, at which time he became division engineer for the Minneapolis & St. Louis. From 1907 until 1912, Mr. Going served as locating engineer in charge of surveys, reports, etc., for the Grand Trunk, and on December 1, 1912, became engineer of construction of that road, which is now a part of the Canadian National, at Montreal, Que. In May, 1923, Mr. Going was appointed terminal engineer of the Canadian National, which position he has since held.

